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## The Relation of Sensation to other Categories in Contemporary Psychology

A Study in the Psychology of Thinking

By

CARL RAHN

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## PREFACE

These pages do not pretend to be a survey of the work done upon the problem of the psychology of thinking, such as has been given to us in Professor Titchener's admirable "Lectures". They are rather an attempt to apply the method of immanent criticism in searching out the implications of the category of Sensation as it appears in contemporary discussions of the problem. This method was wittingly adopted—in spite of limitations which it imposed and in spite of the difficulties which it offered from the point of view of formal presentation—on account of the promise it held of leading the inquirer into the heart of the problem of the psychology of thinking.

If this paper should eventually be found to contain any contribution to the problem, it will be obvious at once that the stimulus which gave rise to it lies in earlier contributors to the subject, and it is a pleasure to acknowledge my indebtedness not only to those whose contributions have been critically examined in these pages, but also to the many others not specifically dwelt upon, among them Marbe, Messer, Orth, Mayer, Kakise, Ach, Schwiete, and finally Binet who grappled persistently with the problem, and thought profoundly concerning it, for many years.

Personally, I am indebted to Professor Oswald Külpe for his many courtesies extended to me while the immediate problem of this paper was forming in my mind during my stay at the University of Bonn; to Professor C. Judson Herrick for his cheerful readiness to discuss questions of neurology that arose persistently during the course of the inquiry; to Professor Harvey Carr and Dr. Stella B. Vincent for the helpful suggestions that grew out of our pleasant conferences. It is to Professor James R. Angell that I am beholden for constant encouragement in the pursuit of this task, and for the inspiration that lies in the ideal of scholarly independence of thought.

C. R.





## I

It is the purpose of this paper to consider an aspect of psychological inquiry as it has been developed especially by a number of workers both in America and Germany. These latter are commonly referred to as the *Denkpsychologen*, yet it would be misleading to suppose that their work is of significance only for the psychology of the logical processes. Nay, it would affect our whole conception of psychic process and psychic content. When we seek to correlate it with the points of view that are familiar to us in America, we note at first blush that in method it has much in common with so-called structural psychology, whilst the problems which it attacks and the questions which it seeks to answer are conceived in a spirit closely akin to the temper of the functionalist. To elucidate and qualify this statement will be part of the burden of the following pages, and it is the earnest hope of the writer that they may contribute in some measure to finding the common ground of these various "schools" in their pursuit of a common task.

Without further introduction we shall proceed to an examination of the sort of problems the movement in question proposes to itself, and its methods of attacking them. As we go along let us note bit by bit the meaning which the various writers put into the psychological terms that they employ. For by doing this it will be easier to note in how far any differences which may be found ultimately to exist between the various schools, are due to differences in point of view as to the nature of consciousness, or to differences in methods of obtaining and interpreting data. Wherever in this paper we are using quotations from the authors under discussion, we shall, when necessary, use the German or French terms of the original, otherwise we shall seek to give an adequate translation in English, sacrificing, where needful, elegance of diction to accuracy of rendering.

## II

Instead of launching upon an historical account of the work on the thought processes in its specifically experimental phases, we shall consider first a treatise by Stumpf, entitled *Erscheinungen und psychische Funktionen*, which partakes primarily of the nature of a theoretical exposition of a consistent point of view—a programme for giving context to problems, rather than a completely fulfilled and grounded system. It therefore lends itself admirably also to our purposes, for it gives a setting in the light of which the discussion of the more specific experimental efforts can be more fully appreciated.

Let us consider what Stumpf alleges he finds on turning to the study of consciousness. For him the total content, the “given” of consciousness, falls into three groups. (1) There are the phenomena, the *Erscheinungen*, which correspond closely to the sensation, the image, and, tentatively, the simple affective elements of current structural psychology. (2) Introspection, for Stumpf, further reveals a consciousness of psychic activities, *psychische Funktionen*, of which we may be directly aware, and the consciousness of which cannot be reduced to sensation and affective elements. Willing, emotion, judging, conceiving, to name only a few, are processes of which we are immediately aware: they are given in the same indefinable consciousness and in the same sense in which sensations and feelings are given. (3) Then there are the relations, *Verhältnisse*, which constitute the third type of given. These relations exist, *a*, between the psychic elements of sensation, image and feeling, which Stumpf comprehends under the term *Erscheinungen*—a word which we shall render in the English as phenomena. These relations are not something that is added to phenomena by our minds through the operation of mental activities upon the sensory or affective content—no, they are conceived by Stumpf to be “given” in consciousness in the same sense in which sensations and feelings are given. They belong to the material with which psychic activities operate, but do not come under the head of psychic activities, nor are they products of these.<sup>49</sup> Another



class of relations, *b*, is composed of those between phenomena and *Funktionen*, and between *Funktionen* themselves.<sup>52</sup> These three categories, then, the phenomena, the psychic *Funktionen*, and the relations, constitute for Stumpf the immediately given of consciousness. We shall have occasion, in another connection, to refer to a fourth category, the "structures" (*Gebilde*), which Stumpf does not, however, regard as being "immediately given" in the same sense as the other three.<sup>65</sup>

For Stumpf the immediately given (*das unmittelbar Gegebene*) is that which strikes one immediately as matter-in-fact (*was als Tatsache unmittelbar einleuchtet*). That which is to make this immediate appeal as matter-of-fact must be such that it can come within awareness. (*Was als Tatsache unmittelbar einleuchten soll, muss wahrnehmbar sein*).<sup>51</sup> It is our purpose to note the implications of this conception of the immediately given and to see in how far Stumpf adheres to it in the upbuilding of his psychological system, especially with reference to his treatment of the presence of phenomena and activities in consciousness. It is the content-character of these two factors, the "givenness" of sensation and affective elements, i. e. of phenomena (*Erscheinungen*), on the one hand, and of psychic activities on the other, that shall engage our attention for the present, and we will leave the discussion of the presence of relational elements in consciousness, which is not an unfamiliar doctrine, for later consideration.

It is hardly necessary to expatiate on what Stumpf may mean by saying that *Erscheinungen*, sensory and affective elements of the content of consciousness, are immediately given. It is simply the structuralistic doctrine that under certain conditions we may become aware of redness and blueness, of the tones that make up a clang, of sweetness, of pressure and cold sensations,—that we may become aware of these as parts of the mass of conscious experience of any moment. His classification of phenomenal elements is as follows: *a*, the sensation contents (*Inhalte der Sinnesempfindung*), including the spatial extensity and distribution of visual and contact impressions,—tentatively also temporal duration and sequence; *b*, memory images (*Gedächtnisbilder*), the 'merely imaged' colors, tones, etc.

Stumpf would leave out of consideration for the time being the classification of the pleasure-pain elements involved in sensory processes, on account of their still questionable status, though he is willing to see them subordinated under the head of phenomena, not as attributes of these, but as a special class.<sup>49</sup> It is not the classification of the phenomenal elements that shall interest us most, but rather their status with reference to the whole of consciousness and their relation to what Stumpf calls the *Funktionen*, that constitute for him another group of psychic givens.

Psychic activities (*psychische Funktionen, Akte, Erlebnisse, Zustände*) are such experiences as the awareness of phenomena, the combination of phenomena into complexes, the formation of concepts, apprehending and judging, desiring, willing and emotional states.<sup>50 52</sup> *Funktion* is here not used in the sense of a result attained through a process, as when we say that circulation is a function of the expansion and contraction of the heart, but in the sense of an activity, of a process, in the sense in which the contraction of the heart is an organic function. It is in the former sense that Stumpf believes himself to be justified in interpreting the term function as used by some American psychologists, such as Dewey.<sup>50</sup> Whether such an interpretation is correct is questionable; yet his own use of the term *Funktion* is brought out by his reference: the *Funktionen* are the activity phases of consciousness, of which we may become immediately aware. In this, Stumpf believes, his use of the term differs from that of Dewey. In order to differentiate the two uses of the term in these pages we shall use the German form when the term is used in Stumpf's sense, and the English form when we refer to the meaning connected with the term by the American functionalists. Limiting ourselves to a discussion of the psychological uses of the term, we note the following with reference to the different shades of meaning connected with it. Both Stumpf and the American functionalists use the term with reference to the activity aspect of consciousness. But where such psychologists as Stumpf seek to understand this activity aspect by considering the psychic life by itself, the functionalist seeks to do justice



to the process aspect by considering consciousness with reference to a biological setting.<sup>5</sup> Stumpf looks inward and there in consciousness is a complex of sensory elements, let us say, which together constitute the object of regard. For Stumpf it is a psychic *Funktion*, an activity of which we may become immediately aware, that is operative in binding together these elements into a figure, a rhythm, or a melody. Or again, given the same object, in terms of the same sensory content, we may at one time take a positive volitional attitude toward it, at another time a negative one.<sup>63</sup> The difference in the two states, then, is not a difference in the sensory content of consciousness, but a difference in the *Funktionen* involved. It is the *Funktion* as it is immediately given in consciousness, that, as a part of the pattern of consciousness, constitutes the difference in the pattern in the two cases. There is, to be sure a complication with other *Funktionen*, says Stumpf, intellectual and emotional, but it is important only to note that it is not the phenomenal content that is different in the two cases, but the *Funktionen* that operate upon that content. With Stumpf, therefore, the category of *Funktion* is a structural category insofar as it is a content among other contents, though he would restrict the use of the term content (*Inhalt*), to the phenomena (*Erscheinungen*), whereas the *Funktionen* are acts, of which we may become aware, which may be perceived by directing attention in "another way". Yet on page 15 of his monograph the *Funktionen* are referred to as contents. And like these others they, too, are "immediately given", though different in kind. In this sense, says Stumpf, there has been a discussion of awareness and perception of psychic *Funktionen* ever since Locke and Leibnitz, to say nothing of earlier thinkers. "These writers deny that the consciousness of seeing can be reduced to memory phenomena accompanying the color phenomena, memory images representing the organ of sight, etc. Still less are such interpretations possible in the case of the consciousness of judging and willing. They are convinced that they apprehend psychic activity in the very process itself, whereas colors and tones are apprehended merely as contents of an act of awareness, (*Wahr-*

*nehmungsakt*), that is, of a particular class of psychic *Funktionen*. According to this view the phenomenal content and the act are interrelated in a manner still to be described, but are not reducible one to the other. . . . It is to be borne in mind that the assertion of the awareness of psychic *Funktionen* as *Funktionen* does not necessarily include a denial of unconscious psychic *Funktionen*."<sup>53</sup>

Thus Stumpf's conception of *Funktion* has its rise. We have said that he looks inward and there in consciousness he discerns sensory and feeling content on the one hand, and "acts" which operate with these, on the other. Contrasted with this mode of procedure, the so-called functional psychologist looks at consciousness with reference to the life-setting of the individual. He tries to understand what function consciousness serves in the total life-process, as it is represented in the adaptation of the individual form to its environment. He asks: What does a given conscious experience do in the adaptive process, and how does it do it?<sup>6</sup> It is here that his conception of psychic function has had its rise. It considers, say a given image content, from the point of view of the function which it serves in some phase of adaptation involving consciousness. Examples of such phases are experiences like perceiving, judging, willing and emotional states. Introspectively, however, the setting in which the given image appears in these phases of adaptive activity, need not necessarily reveal anything at the periphery of the field of consciousness that is *qualitatively* different in kind from the sensory content of the image which is at the focus of attention and the affective elements associated with it. If the question of the awareness of process should become a problem for the functionalist, say in the case of judgment, he need not necessarily look for it as being given in consciousness in terms of mental texture other than that already known to him in sensation and affection. Having thus briefly sketched the essential features of the two points of view, we shall leave further comparison for the present, and return to a discussion of Stumpf's conception of the relation between two of his categories of psychical givens, the *Erscheinungen* and the *Funktionen*.



## III

The difference between *Erscheinungen* and *Funktionen*, says Stumpf, is most striking. "No predicate of the one, unless it be that of duration, can be attributed to the other. Nor do the *Funktionen* possess intensity in the same sense as do tones and odors." They have their own peculiar attributes, "the clearness of awareness, the evidence of judgments, degrees of generality in the case of conception. If in the case of the emotional *Funktionen* there should be found somewhat analogous to the intensity peculiar to sensory impressions, one need not deny it, but then we have to deal merely with an analogy, and not with an intensity in the same sense of the word as in the case of sensation."<sup>54</sup>

Two criteria for distinguishing between *Erscheinungen* and *Funktionen* are given by Stumpf. (1) Each is independently variable over against the other.<sup>56</sup> (2) "No predicate of the one, unless it be that of duration, can be attributed to the other."<sup>54</sup> And we are inclined to find implicit in his exposition a third criterion that appears to have been operative to a certain extent in bringing Stumpf to his distinction between these two types of ultimates: the mode in which they are apprehended. They are apprehended by "different directions of consciousness". The phenomena (*Erscheinungen*) "stand over against us as somewhat objective, that possesses its own laws, a somewhat that we have merely to describe and acknowledge". The *Funktionen*, however, we are told, are given us by "another direction of consciousness".<sup>57</sup> While Stumpf does not enlarge upon this third criterion, viz., mode of behavior under introspection, we still find it implicit in his statement that the *Funktionen* are apprehended by a "direction of consciousness" other than that by which the phenomena are apprehended.

## IV

Stumpf believes that he can postulate on introspective grounds the possibility of independent variability of either the *Erschein-*

*ungen* or the *Funktionen*, without a variation in the one being necessarily accompanied by a concomitant change in the other. It will not be unprofitable, we believe, to follow him a little way while he is trying to make his point, for it will help us somewhat in understanding how he comes to believe that he is justified in regarding the *Funktionen* as being immediately given, and also to understand just what phases of consciousness he would subsume under that concept. Let us consider first his instances in which he believes a change in *Funktion* to occur while the *Erscheinungen*, the sensory content, remains unchanged. He first takes up a case in which the *Funktion* of awareness is involved. Awareness is apparently taken by Stumpf in the sense of "simple apprehension" the most primitive of psychic *Funktionen*, the process "by which parts or relations are precipitated out of the undifferentiated chaos of phenomena".<sup>57</sup> It is the *Funktion* that precedes the judgment, whether implicit or explicit. "To be sure," he continues, "there usually goes with it an instinctive positing of the part noted, and later it is often accompanied also by a conceptual judgment concerning the existence of the part or relation." The process of being aware (*Wahrnehmen, Bemerken, Notiznehmen*), is for Stumpf to be differentiated carefully from the *Funktion* of judgment and the "instinctive positing" just mentioned. Awareness of phenomena of the first class, of sensory content, he calls sensing (*Empfinden*), awareness of phenomena of the second class, of images, he calls imagining (*Vorstellen*).<sup>57</sup>

"Our thesis," says Stumpf, "applied to the case of sensory awareness, asserts that in the transition from being unnoticed to being noticed there need not necessarily be a change in the phenomena, in the sensory content, itself. That which changes is essentially of the nature of *Funktion*, of process. The transition, putting it figuratively, consists in an amassing of consciousness with reference to some part of the phenomenal content. Thus when one tone of a chord is singled out, there need not be a change in the chord as phenomenal content. What I apprehend at first as an unanalysed clang, then as an analysed one, remains what it was; so too the unified impression of some article of food, in



which later I note somewhat of sweetness, somewhat of sourness, perhaps also an odor and a temperature quality; so too the dermal sensation which is later analysed into pressure, cold and pain sensations,—these remain what they were. And it is not merely the objective stimuli and the physiological processes, but also, I believe, the subjective phenomena (*Erscheinungen*) that may remain the same, unchanged.”<sup>59</sup> “To be sure,” he continues, “in most cases in which we say that a sensory impression appears clearer, more distinct, and more ‘transparent’ with reference to the total ordering of its contents, than a moment ago, there can be shown numerous changes in associated imagery. . . .” There is a quickening of the apperceptive process. A second view of a picture allows it to be taken in with fewer and shorter stopping points. The muscular sensations are reduced at least with reference to the duration attribute. But not all cases, he believes, can be thus explained. Among them those just cited above. Likewise the following: Coming from the theatre, rapt in thought, we are aware in a vague way of the row of brilliant street lamps, or of the strokes of the bell tolling the hour. We now turn our attention directly to the lights, or to the further strokes. “We will have to say to ourselves,” continues Stumpf, “that just a moment ago there also were lights and auditory impressions of the same kind and in the same spatial or temporal relations, incidentally also of the same intensity as those of which we are now aware.” What has changed in all these cases is not the sensory content, according to Stumpf, but the *Funktion*. Since we saw that the peculiar attribute of the *Funktion* or process of awareness is the degree of clearness, we must infer that it is that which has changed in all these cases. We recall that by way of definition of this change, Stumpf had said that “the transition, putting it figuratively, consists in an amassing of consciousness with reference to some part of the phenomenal content”. It would appear that the factor in conscious experience which is the basis for Stumpf’s judgment as to the immediate givenness of the *Funktion* in the case of awareness is just this amassing of attention and holding it there. This much for clinching in a concrete

case the content of his idea of one of the *Funktionen*. We shall revert to this anon, but for the present let us consider in what sense the phenomenal elements constituting the presentation may be said to be the same or similar in the mental state before attention is directed to the lights and in the state in which it is thus directed.

## V

In support of his position Stumpf refers to a paper by A. Marty which contains a criticism of James.<sup>58</sup> The passage in James to which Marty refers has the following citation from Stumpf: "And when, after successfully analysing this total, we call it back to memory, as it was in its unanalysed state, and compare it with the elements we have found, the latter (as it seems to me) may be recognized as real parts contained in the former, and the former seen to be their sum. So, for example, when we clearly perceive that the content of our sensation of oil of peppermint is partly a sensation of taste and partly of temperature."<sup>29</sup> Commenting on this, James says: "I should prefer to say that we perceive that objective fact, known to us as the peppermint taste, to contain those other objective facts known as aromatic or sapid quality, and coldness, respectively. No ground to suppose that the vehicle of this last very complex perception has any identity with the earlier psychosis—least of all contained in it." Closer consideration of these two statements will bring us face to face with the parting of the ways between so-called structuralism and functionalism, and will also make clear to us how divergent are the two attempts to do justice to a completer understanding of the activity side of consciousness that are represented by such psychologists as Dewey and Angell on the one hand, and by Stumpf on the other. It is hoped that this consideration, together with its bearing upon a discussion of the experimental investigations of the thought processes, which is to



follow, will be a sufficient justification for broaching in this connection the subject of the psychologist's fallacy and of the immediately given.

## VI

We saw that according to Stumpf the immediately given is the "phenomena and *Funktionen* and the relations immanent in these, of which an individual is momentarily conscious", i.e., the psychically immediate. We have no reason to believe that a psychologist of the temper of James could not agree to this definition, at least in so far as the given is defined as that of which the individual is momentarily conscious, or the psychically immediate. The difference therefore must lie in the use to which the data thus gained in the form of the subject's judgments regarding the content of his immediate experience are put and in the interpretation that is placed upon them. James' contention is that the peppermint experience is a totality and has nothing in common with the experience in which consciousness analyses oil of peppermint into a complex of stimuli mediating taste and temperature sensations. That analysis has been made under conditions in which attention is focussed on the content as *Erscheinungen* and yields results in a rather elaborate judgment as to the character of the "object" presented. (We can here leave aside the question of James' use of the term, "object" and "objective".) The two experiences are quite dissimilar and the latter cannot be said to be contained in the former. James here refers to the analytic experience as a whole—in the terms of Stumpf not merely to the *Erscheinungen* which constitute the "object", but also to the *Funktionen* which may be directly involved in giving the immediate experience of peppermint-analysed-into-its-elements.

Taking each case by itself we may say that in the unanalysed state that which strikes as immediate matter-of-fact (*was als Tatsache unmittelbar einleuchtet*) is to be couched in terms of

the judgment, that within the larger setting which it had with reference to some activity, the part that was singled out and noted was a unitary somewhat; the peppermint, with a pleasurable or painful feeling tone, mayhap also some somatic and visceral sensations. This much is the immediately given—a description of the immediate psychical content. It is that which the subject reports. So much for the first phase of the experience, in which the object is “given” as a whole, unanalysed. Then follows the analytic phase, or the one in which the object is apprehended at the focus of attention. The individual now reports that he can discriminate two sorts of sensations: taste and temperature. This statement, plus anything he may have to say concerning his awareness of concomitant process, whether sensations connected with the accommodation of the sense organ, or *Funktionen* if he employs that category, or other phenomena at the fringe,—these will constitute the psychological data of the immediately given of the second experience. We do not pretend that this is an exhaustive statement of all that a careful observer might report as the immediately given in the two experiences. But it is by means of such judgments only that the psychologist can in any sense be said to get at the content that is immediately given in any consciousness other than his own. It is only in this way that the immediately given in the character of “mind-stuff” can be made the *starting point* for a body of psychological knowledge dealing with human consciousness.<sup>68</sup> We now ask: What may the investigator do with the data thus gained? Stumpf claims that he is entitled to read back into the first experience the “content” of the second experience. There is nothing, to be sure, that would militate against his right to do this if he so desires. And if by doing so he obtains a system of knowledge that serves his purposes and that may serve the purposes of others, he is thereby justified by his procedure, so long as in doing so he is not introducing an element of immanent inconsistency into his system.

Yet we believe that this latter thing does happen. In what sense can that part of conscious content abstracted from the second experience be said to be “recognized as real parts con-



tained in the former"? The abstracted "elements" are immediately given as part of another, the second experience, and that section of the content of the second experience therefore cannot be said to be identical with the content of the first experience or any part thereof. If not that, have we any immediate evidence that they are identically similar? If we take immediate evidence to mean the record of immediate judgments in the sense defined above, then this question, too, must receive a negative reply. Even Stumpf can do no more than tell us that "we will have to say to ourselves that just a moment ago", while we were lost in thought in coming down the lighted thoroughfare, "there also were lights and auditory impressions of the same kind, and in the same spatial or temporal relations, incidentally also of the same intensity as those of which we are now aware". This statement, however, is not of the nature of an immediate judgment passed upon the immediately given content of the first experience, for such could only have been obtained by stopping our man lost in reverie and requiring him then and there to tell us concerning the character of sensory content as it was marginally present in consciousness. Stumpf himself tries to subsume his judgment just quoted under the head of direct comparison, for he is apparently aware that a doctrine so important for his theory as this is, ought to rest on some kind of evidence. We do not here cavil at his argument that the term "direct comparison" ought not to be restricted to those cases in which the two contents to be compared are simultaneously present to consciousness during the act of comparison, but that it should be made to include also those cases of comparison of a present content with another that is just passing, or of one just passing with one that preceded it but is still lingering in consciousness.<sup>61</sup> We would, however, suggest that the conditions under which this method of direct comparison is to be employed, be more rigidly defined, in order that we may have a criterion for the validity of the evidence which is yielded by this method. The evidence derived from the illustration cited in Professor Stumpf's treatise does not appear to be altogether unambiguous. Reverting to the case of the lights

and the strokes of the bell tolling the hour while we are coming from the theatre, lost in thought, we are told that we can escape the interpretation that the two contents are alike only by making special artificial assumptions, e.g.: that in the reproduction of the content just past for purposes of comparison with the present content, there is in the process of reproduction a change or an assimilation to the standard of the present content.<sup>60</sup> Why such an objection should appear particularly far-fetched and "artificial" is not immediately patent to us. That such an assimilation of past experience to the standard of present experience frequently does occur, no one will doubt. We know that the lights of our city streets possess fairly uniform candle power, that the tolling of the bell in the steeple, too, is fairly constant in timbre and rate of stroke,—what then would be more natural at first blush than to infer that the experience of just a moment ago must have been practically (there is much virtue in this expression of our everyday life) the same as it is now that we are attending to the objects directly. (At this point Titchener might well warn us against what he has called the "stimulus error.") And even when the judgment is not based on mediate experience as just described, but an attempt is made to base it directly on a comparison of the two contents by the method discussed above, it would be preferable to have the two experiences called out under somewhat different conditions than is the case in the illustration, i.e., we would ask for experimental conditions that would minimize the suggestive influence of the content given in the state of focalized attention.

A thorough-going experimental psychology would demand that every aspect of the sensory experience be compared in the two cases. What is the difference of the content mediated by the same objective stimulus under conditions of focal and of marginal apprehension? How do the sensations compare with reference to their various attributes? Do they differ at all in quality, or in duration, or in extensity, or in intensity? And then the further question arises whether these are the only respects in which the sensations may differ. Only after all of these are answered are



we entitled to conclude that on the basis of immediate introspective evidence the two contents must be regarded as being identically similar. Lacking experimental evidence on some of these points, we turn to everyday introspection and to the difficulties which this question has caused in some of the theoretical discussions, for a formulation of the problem. Here we note that certain doctrines have become so thoroughly incorporated into the psychological point of view, that they inhibit effectually the rise of some of the questions indicated above. The doctrine of specific energy apparently precludes debate as to the question of the sameness of quality, so long as the objective stimuli and the nerves stimulated remain the same. Duration, too, so far as the immediate sensation is concerned, as over against its influence upon future psychic experience, would be regarded as the function of the same factor in both cases, i.e., of the application of the stimulus subject to the conditions of psychological fatigue. We would question, however, whether the immediately given duration for consciousness would necessarily be the same. Without raising the issue of a possible difference in behavior of intrinsically pleasurable and intrinsically painful sensory processes as regards subjective duration under the two conditions, of being attended to on the one hand, and not being attended to on the other,—we would ask whether the attention reaction does not often contain within itself the conditions for prolonging the objectively measured time of what subjectively is experienced as a uniformly continuous sensory process? This problem is perhaps most fascinating in the field of cutaneous and auditory sensation. In the case of the bell tolling the hour, there is a possibility for the last chime to linger on in consciousness in a way it does not do under conditions of inattention. Under such circumstances the ear woos the sound, reaches after it, as it were, as it retreats and gradually envelopes itself in nothingness. When we turn to the attribute of extensity, orthodoxy again inhibits any tendency to dissent from the statement that the two states exhibit no difference of sensory content in this respect. The moment, however, that we come to the question of intensity,



we note a more pronounced lack of unanimity. At this point we can find some experimental material that is more or less germane. If we take the term broadly enough, most of these experimental attempts may be subsumed under the head of distraction tests. Most of this work is mentioned by Titchener in his "Lectures on the Elementary Psychology of Feeling and Attention", and its trend is in general to show that within a certain range at least attention does tend to increase the intensity of the sensory content.<sup>91</sup> Stumpf himself admits this much in a later monograph, *Zur Einteilung der Wissenschaften*, where he says: "It does happen, of course, that at times the *Funktionen* retroactively bring about a change in the *Erscheinungen*, as when in the case of concentrated attention the intensity of a very weak sensory or image content is raised to a certain degree."<sup>69</sup> This would in a certain sense be equivalent to admitting the validity of our objection, if it were not for his immediate qualification following the statement just quoted: "But in general such retroaction does not occur, and when it does occur, it is always within the limits of the possibilities prescribed by the nature of the *Erscheinungen*."

We find, then, that there is some question whether we are justified in asserting unqualifiedly that the sensory "content" of the two types of experience mentioned by James and Stumpf, is identically similar as regards the usually recognized "attributes."

## VII

Having touched upon the question with reference to the usually recognized attributes of sensation, we may go on to ask whether these are the only directions in which the sensory content might possibly differ in the two states. Here we come upon one of the most vexing of the moot questions of psychology, the question of clearness or vividness as an attribute of sensation. All writers appear to agree that if there is an independently distinguishable aspect of conscious experience that is to be designated by that name, it is to be noted in connection with that phase of

consciousness which is known as attention. Stumpf, we saw, makes clearness an attribute, not of the sensory content, but of the *Funktion* of awareness. The amount of consciousness that is involved in my being aware of the bonfire outside, may vary from almost none, when I am only marginally aware of it, to almost all, as when I sit fascinated, as it were, by the leaping tongues of flame and the mystic clouds of smoke. The difference in the two cases, we have already seen, at too great length, perhaps, lies for Stumpf not in the sensory content, but in the mental activity that is operating upon that content, an activity of which we may be distinctly aware and the attribute of which is just this degree of clearness. When we turn, however, to the pages of a psychologist such as Titchener, we read the following: "Whatever attention is, it must be described in terms of mental processes, sensations and images and affections, and explained by reference to its physiological conditions."<sup>77</sup> Titchener, therefore, proceeds to make clearness an attribute not of a mental activity, but of one of the elements, viz., sensation. "Clearness is the attribute which gives a sensation its particular place in consciousness: the clearer sensation is dominant, independent, outstanding, the less clear sensation is subordinate, undistinguished in the background of consciousness."<sup>78</sup> A sensation is clear when it "is at its best, when it is making the most of itself in experience. Clearness is an intensive attribute, in the sense that it shows degrees of more or less: but it is altogether different from intensity proper."<sup>78</sup> It is important for us to note only that for Titchener clearness is regarded as an attribute of sensation and that it is "altogether different from intensity proper". In trying to make clear this distinction he introduces a quotation from Wundt. He writes: "In the first place, there can be no doubt of the independent status of clearness as sensation attribute. As Wundt says: 'Klarheit und Stärke der Eindrücke sind durchaus von einander verschieden'; 'das Klarer- und das Stärker-werden eines Eindruckes sind . . . subjectiv wohl zu unterscheidende Vorgänge'. "<sup>90</sup> The citation from Wundt is correct; not so, however, the interpretation that Titchener puts upon it. For



when we read the context in Wundt, we come upon the following: "Da die Stärke der Empfindungselemente einer Vorstellung auf die Klarheit einen zweifellosen Einfluss ausübt, so sind nicht selten beide Begriffe mit einander vermennt oder sogar für identisch gehalten worden. Streng genommen kann aber immer nur von der Stärke der Empfindungselemente, nicht von der Stärke einer Vorstellung die Rede sein, da in diese meist Empfindungsinhalte von sehr verschiedener Stärke eingehen. Umgekehrt dagegen sind Klarheit unde Deutlichkeit ausschliesslich Eigenschaften der Vorstellungen, die auf Empfindungen nur übertragen werden können, wenn diese als Vorstellungsbestandteile gedacht werden."<sup>109</sup> In other words, Wundt does not make clearness peculiarly an attribute of the sensation or image element, but an attribute of the complex percept or *Vorstellung*. Wundt is quite explicit on this point, and in the very context from which Titchener takes the quotation, Wundt repudiates the interpretation that is put upon it. But the essential thing for us is that Wundt does note the fact of clearness and that he makes it an attribute of content.

Here we have examples of three different points of view regarding the fact of clearness as a factor of conscious experience. All three agree that introspection reveals the fact of degrees of clearness as an attribute of some phase of consciousness, and that the higher and highest degrees of clearness accrue to states of consciousness under conditions that are technically called "focalized attention". But they differ as to the phases of conscious experience of which clearness is to be regarded the attribute. Titchener makes clearness one of the attributes in terms of which sensation and image elements are to be described. Stumpf makes it the attribute of one of his psychic *Funktionen*, the attribute by which the *Funktion* of awareness is presumably revealed to us as "immediately given". Then we come to Wundt. Like Stumpf, he too believes that we may become directly aware of psychic activities: "Alongside of the going and coming of percepts and ideas (*Vorstellungen*) we are now and then more or less distinctly aware of an inner activity that we call attention."<sup>108</sup> Yet unlike

Stumpf, Wundt would still reduce this consciousness of psychic activity to elements of sensation and affection. But clearness is not an attribute of this complex of elements that taken together go to constitute our consciousness of activity; nor is clearness for him an attribute of the sensation and image element as it is for Titchener; it is rather one of those "new attributes, peculiar to the compounds themselves", that "always arise as a result of the combination of these elements".<sup>106</sup> "Since clearness, obscurity, etc., . . . always arise from the interconnection of psychical compounds, they cannot be regarded as the determinants of psychical elements." We have therefore before us a case of agreement as to the "immediate givenness" of the aspect of clearness in conscious experience, but disagreement as to the particular phase of conscious experience of which it is to be regarded the attribute or determinant.

### VIII

Is there any way in which we can gain vantage ground whence we may see how these differences arise in the three psychological systems? One way, it would seem, may prove fruitful. That is, attempting to attain to an appreciation of the immanent relationship of the psychological categories within the various systems. That will obviate an exposition anew of the ramifications of the problem of mental analysis as a scientific method. We will examine instead the precipitants of what various writers regard as legitimate application of this method. Let us consider first various implications involved in Titchener's exposition. For him the "given" is the concrete experience, e.g., the square and the melody. "Our psychological task is to analyse these given perceptions, to discover their elements, and to formulate the laws under which elementary processes combine. That done, we can write for 'square' and 'melody', 'these and these elements connected in these and these uniform ways', and we can go on to search for physiological conditions. We have solved our



problem in analytical terms; we have not first defined the terms, and then put them together to produce something that was not contained in the definition."<sup>81</sup> Titchener is also fully aware of the relation of his sensation elements to the percept: "The elements are . . . the result of analysis; the perceptions are the original things, and the sensations are found in them by observation; perceptions are given us, and we discover that they are analysable. Misunderstanding here is fatal to the student of psychology, for it means misapprehension of the central psychological problem."<sup>79</sup> The mental elements, processes "that cannot be further analysed by introspection", of which sensations constitute a class, "are simple . . . in the sense that they are mental experience reduced to its lowest terms; but they are still real processes, still actual items of mental experience. Hence, like the chemical elements, they show various aspects or attributes,—present different sides, so to speak,—each of which may be examined separately by the psychologist. It is by reference to these attributes that introspection is able to classify them under different headings".<sup>75</sup> The mental element must be defined by "an enumeration of its attributes".<sup>97</sup> Titchener is furthermore at pains to have us know that the elements of sensation, feeling, and image, are not to be conceived of as static things, but as processes.<sup>71</sup> They melt and fuse and flow into one another as they occur in the stream that we call our consciousness. Yet with all this insistence on the process character of consciousness, Titchener nevertheless reverts ever and anon to the use of analogies taken from physical science which are not always the happiest, if his intention is to emphasize unambiguously this process-character.\* Whatever content the chemist may put into his concept of chemical element, one thing there is that is not a part of its meaning, it does not signify a process. The concept of "process" implies a correlative one of a structural system of parts or elements which act and react upon one another. It is this interaction within a

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\* Cf. Titchener, *A Textbook of Psychology*, 46: "They (the elementary mental processes) must remain unchanged, however persistent our attempt at analysis." See also above § 11.

structural system that constitutes a process. In the mind of the chemist the elements are abstractions, to be sure, but the essential *Merkmal* of this abstract concept is that of a relatively fixed form of matter that behaves thus when it is brought into interaction with certain other elements, and thus and so when it comes into interplay with still other forms or combinations, under these and these conditions. And it is this interaction between the various elementary forms of matter that constitutes a chemical process. But for the chemist the abstract element which he chases through these various processes remains a relatively fixed substrate, a "form of matter". Now it may come to pass, however, that a physicist comes along and takes one of the simple substances of the chemist into his own laboratory, and now, for the purposes of the physicist, it may become within itself, without reference to other substances even, a highly complex affair. It may become a closed system of forces or of atoms or what not, which act and react upon one another in certain definite ways. In other words, there are processes going on within, and the physicist by his analysis has gone beyond the analysis of the chemist. What is more, this analysis is not altogether merely a matter of theory, but is paralleled by some empirical evidence. For the chemist, however, such an analysis is irrelevant; for him the element remains an ultimate somewhat, which by interaction with others, gives rise to various chemical activities or processes, in the course of which the element may discover various attributes or properties that are brought out by varying the conditions under which it is brought into interaction with the other elements. It is considerations such as these that lead us to believe that the analogy of the chemical element is an unfortunate one if our meaning is that the simplest analysable content of consciousness is essentially a changing, fluid somewhat. Change and flux are the result of interaction of the elements, under varying conditions of heat, of pressure, etc., but these processes are not themselves the elements. To refer to a phenomenon now as an element and now as a process implies a shifting in purpose and in point of view, as in the case of the chemist and the physicist cited above. If the



element is to be considered as a part, an irreducible, ultimate content of consciousness, then it cannot at the same time be regarded as a process, for a process implies the interrelation of a number of elements or factors. The concept of element is, or formerly was, a structural category, whereas that of process is a functional one.

## IX

But to leave the question of nomenclature—for we are here interested chiefly in the manner in which the attributive aspects of experience have been singled out and in the method by which they are “attributed” to the various categories, i.e., how do the “attributes” come to constitute the element?—We next note that affections, ideas and sensations are the “results of analysis”.<sup>81</sup> They are the simplest, rock-bottom forms of “real”, “actual” experience that analysis will divulge. As real components of consciousness they reveal to us certain aspects or attributes, just as do the chemical elements.<sup>75</sup> It is in terms of these attributes that a sensation is to be defined, says Titchener, and the sensation is not something over and above the sum of these attributes. His position is further similar to that of Külpe, who says at the time of writing his text: “These attributes are characterized (1) by their inseparability from the sensation . . . (2) Further, the nullification of any of the attributes involves the disappearance or cessation of the sensation.”<sup>82</sup> We may now ask: What is the method by which these attributes of the element are determined? Titchener tells us that the element is not further analysable by introspection. On the other hand we are told that the element presents different aspects or sides, called attributes, that can be separately attended to. Thus attended to they are discriminated, and what is this other than further analysis? Is it other in kind than that which yielded the elements? And are the precipitants of this further analysis of another sort?

This question has been touched upon, among others, by Tal-

bot,<sup>70</sup> Washburn<sup>98</sup> and Calkins.<sup>23</sup> Talbot, writing on "The Doctrine of Conscious Elements", points out that "the modern theory lays particular stress upon the fact that the psychological element is an elementary *process*", and that the "criterion of a psychological element is irreducibility". And yet, coming to discuss the attributes Talbot says that "it is a fact that the work of analysis does not actually cease when they (the irreducible ultimates) are discovered . . . there is need for a second process for the purpose of determining the properties of our elements . . . In the first analysis we passed successively from one process to another, finding in each new stage the explanation of the more complex one which preceded it. When we have at length reached a process which we cannot explain by means of another *process*, our regress is finished, our element is discovered. Whatever analysis may now be possible, will be entirely distinct from the first, and will in no way affect its claim to be complete. The attempt to find an explanation for our process in something else than *process*, the effort to go behind our ultimate in order to explain it, would but repeat the fundamental error of the doctrine of the faculties." Yet the writer has failed to show why the precipitant of the last analysis, the "attribute", is not entitled to be called a process just as much as are the percept and the sensation, which, we take it, constitute the earlier precipitants in the "regress". It is simply asserted that the second analysis is entirely distinct from the first one, *i.e.*, from the analysis by which the sensation is abstracted from the percept, and presumably also from that by which the percept has been abstracted from the total experience of the moment. (This would seem to be implied by the use of the term "regress".) An immanent criticism of the position just noted is impossible, however, for nowhere in the paper is there a direct definition of the conceptions of "analysis" and "process". We take the word "distinct" in the sense of separate process of analysis, rather than in the sense of a different kind of analytic process, for the writer says, "In the first analysis we passed successively from one process to another, finding in each stage the explanation of the more complex one that pre-



ceded it." From this it appears that the writer would not hold that the three analytic processes that we mentioned represented different methods of analysis. The distinction, therefore, must lie in the precipitants, that is. in the percept, the sensation, and the attribute. The percept is a complex process. The sensation is a simple process. It is an "ultimate". The attributes are not processes, they are merely "attributes of our elements". In calling the element a process, Talbot believes that its "functional nature" is being emphasized. From this it would appear that "functioning" is conceived of as being the essential *Merkmal* of "process" as a psychological category. Now it may well be that what analysis brings to light when it discovers what Talbot and Titchener designate as an attribute, may be the functionally determining factor in many of our conscious reactions: e.g., intensity of a tone rather than any other of its "attributes". Intensity functions frequently, just as does quality, or a complex stimulus pattern, in evoking its own peculiar specific reactions, and if this be admitted to be tantamount to ascribing to it a "functional nature", then the intensity, as an "attribute", has the same claim as the sensation, as an "element", to be designated a "process". If, therefore, intensity be conceded to possess functional value in its own right in determining some of our conscious reactions, Talbot cannot on that score deny it the right to be called an elementary process. Also, it appears to satisfy the criterion of irreducibility. The only question that could arise is this: Has it been abstracted from the complex mental state by a legitimate process of psychological abstraction?

Calkins, in a paper on the "Attributes of Sensation", commenting on the position of Talbot, says: "either the sensation has attributes, but then it is complex, no element and has lost its excuse for psychological being; or the sensation is an irreducible and unanalysable element, but then its simplicity is absolute, not to be trifled with, and not to be explained away by reference to any second process of analysis into elements, which yet are not elements, but only 'attributes', 'aspects' or something equally vague and meaningless." Consequently Calkins avers that inten-

sities and qualities "take their places among the distinguishable elements of consciousness", for "if abstract irreducibility and distinctness be seriously maintained as the sole criteria of the psychic element, analytic psychology has no place and no use for the 'attribute' of sensation". In other words, Calkins affirms that on the criterion of unanalysability it is the "attribute" that should be regarded as the element in consciousness. We have, therefore, two different conclusions as to the psychic ultimates based on the criterion of irreducibility.

Washburn, in a paper on psychological analysis, points out that such differences are very likely to arise so long as our conception of analysis is not carefully defined. Of purely "psychological" methods she distinguishes two: "(1) the psychological method of calling mental phenomena elementary because they are the simplest phenomena that, being independently *variable*, may be attended to separately; (2) the psychological method of calling them elementary because they are the simplest phenomena, that, as capable of being *experienced apart* from each other, may be attended to separately." Calkins' element is a result of the first method; Titchener's is a result of the second.

## X

Such being the method by which the sensation is obtained as a psychical element, we find that Külpe's statement, quoted above concerning the nature of the attributes and their interrelations, is quite in accord with Washburn's analysis. And we find that Titchener's statement accords with that of Külpe. For Titchener, then, the sensation element is the sum of all its attributes, and not a something over and above these. "The annihilation of any attribute carries with it the annihilation, the disappearance, of the sensation itself."<sup>82</sup> It is the being given together, therefore, of the attributes that constitutes a sensation a "real process", an "actual item of experience". "If a sensation is to exist, it must come into being with all its attributes."<sup>83</sup> Since an attribute



cannot exist in consciousness without the others, it cannot lay claim to being an independent element of experience; since when one is present, the others, too, will be discovered, and since they somehow constitute a unitary item of experience, the complex is designated as the element. Yet the question may arise whether their unification or incorporation into a single item of experience is a function of their peculiar psychic character, or whether it is not rather a function of the habit of objective reference. If the former is to be the case, then in every fusion of sensations of different departments of sense, introspection would always unambiguously connect up the intensity component of the experience with its proper quality; yet it is still a moot question whether this is always the case. If, on the other hand, the uniqueness and irreducibility of the sensation element is a function of the habit of objective reference to a stimulus acting upon a particular sense-organ, then too it cannot be regarded otherwise than as a derived, rather than an inherent, characteristic of the element. For the present, therefore, we can mean by the term "inseparability of the attributes" nothing more than a condition for their entrance into, and exit from, consciousness; but nothing for certain concerning their behavior while they are in consciousness. It still remains a task for experimental psychology to determine whether or not the incorporation of the "attributes" into a unique item of experience, a particular sensation, is an 'irreducible' fact of consciousness.

It may not be amiss to discuss at this point the relative importance of the various attributes, which would lead up to a consideration of the relation of the attributes *inter se*. If we turn to some of the textbooks of psychology we very often run across a statement to the effect that of all the various attributes that the different writers ascribe to the sensation element, quality is somehow the most important of the lot. It is the "body" of the sensation, so to speak, and so soon as we have passed the introductory pages of preliminary definition, we find many of the writers falling into the way of speaking as if the quality *were* the sensation. Thus Külpe: "Im allgemeinen lassen sich alle diese Eigen-

schaften variieren, und es beruht darauf die Möglichkeit ihre Gesetze im Einzelnen festzustellen. Nur spielt auch in dieser Beziehung die Qualität eine eigenthümlich Rolle. Eine Aenderung der Qualität ist mit einem Uebergang zu anderen Empfindungen identisch, während eine bloße Aenderung der übrigen Eigenschaften bei gleichbleibender Qualität scheinbar dieselbe Empfindung fortbestehen lässt. Auch hierin zeigt sich dass die Qualität mit dem Wesen der Empfindung auf das Engste verwachsen ist. Sie representirt gewissermassen gegenüber den anderen wechselnden Eigenschaften den festen Kern der Empfindung."<sup>33</sup> It looms large in its importance for experience, and is singled out and attended to while the other attributes, like mute Cinderellas, perform their humbler functions unobtrusively in the background. Yet here again, it is a question whether this advantage possessed by the attribute of quality must be accepted as an ultimate fact testifying to a unique position of quality as over against the other attributes, specifically as over against intensity. It may well be that the usual function of sensory consciousness in human experience is the discrimination of qualitative differences. For cognitive reactions, for building up knowledge, apprehension of quality may be basic, and attention focuses upon it. Yet there may be other reactions in which it is not the quality but the attribute of intensity that takes first place on the stage. This may be the case in emotional reactions of the more primitive sort, where the intensity of stimulation becomes the functionally important factor, not the quality. For aesthetic reactions degree of intensity often becomes as important and often more important than sensory quality. There are individuals for whom a bit of music is carried almost entirely in terms of intensity changes plus rhythm. Primitive music, characterized as it is by a poverty of tonal variation and making up for this monotony by accent and rhythm, may present favorable material for a study of this question. Of two tones struck in rapid succession, the one softly, the other accented, the hearer is immediately aware very often of differences in intensities, but is in a quandary as to the relative position of the two experiences



in the tonal scale. It may well be that for his "immediate experience" the elements that came to consciousness may have had the marks of being auditory rather than visual experiences, but they may have been quite innocent of any specific quality mark; if *qualé* there was, it did not possess the same degree of clearness as did the intensity character. Apply an icy cold point never so lightly to the skin, and remove it quickly; the subject reports intensity of sensation, but often is in doubt as to the *qualé*. We may therefore ask whether the tendency to regard the quality as the "body" of the sensory experience, as over against other attributes, especially as over against intensity, is not a function, in part at least, of the habit of attending to the quality of the sensory content, rather than to its other "aspects". If this should prove to be the case, quality would be robbed of its unique position among the attributes.

Concerning the relation of the various attributes that are usually named as the inseparable constituents of a sensation element, we have thus far come to note the following considerations: We ought to observe some caution lest we put into the conception of "inseparability of the attributes" a meaning that is not yet warranted by experimental evidence. To affirm the inseparability of the attributes means only that they come into and go out of consciousness together. It does not necessarily mean that while they are in consciousness they are held together in a unity by some tie inherent in their peculiar psychological constitution, for it may well be that the readiness with which we attribute the "attributes" to one and the same "sensation", may be due to the operation of factors extrinsic to the particular "sensation". . . . We noted further that there is a tendency to regard quality as the more basic of the attributes, and the question presented itself whether this had to be accepted as an ultimate fact, or whether there are not conditions under which degree of intensity may come to assume the "body" rôle. If any introspective evidence should be brought to light that would show that this may at times be the case, then quality would be robbed of its seemingly unique position among the attributes. That

intensity may become the functionally important factor cannot be doubted on introspective grounds; that in some of the lower forms it is functionally *the* important factor, as quality for the most part is with us, seems highly probable; it therefore remains as yet an open question whether we ought unreservedly and without qualification ascribe to *qualé* the unique position of being the fundamental attribute, the "body" of the sensory experience. . . . And we saw in the third place that while there appears to be a close connection between the various attributes so far as their entrance into, and exit from, consciousness is concerned, it was nevertheless possible in the case of intensity and quality that they might differ widely with respect to their attentional clearness. This is in a certain sense a restatement of the point just made, viz.: that the various attributes might differ from time to time in their functional value. Nevertheless the restatement in terms of attentional clearness might prove to possess some significance.

## XI

It is this last point that is of paramount interest for us: the status of clearness as an attribute of sensation, such as Titchener makes it, as over against Stumpf, who makes it an attribute of another psychological category: the *Funktion*. If it be true that under certain conditions attention may focus upon some one of the attributes of a sensation to the neglect of the others, so that it thereby attains to a greater degree of attentional clearness than do the others, then we would have an anomalous case of one and the same sensation characterized by two "clearnesses", and these not attributable to the sensation as a whole, but to various ones of its attributes. How this situation can be escaped is hard to see, for we certainly do have conscious experiences in the course of the serious business of life, in which certain ones of the aspects of sensory experience must be abstracted from, and attention given only to one, say quality or intensity. Or would



one claim that the process of attention in this case functions quite differently than in the case where we are attentive to other objects of normal experience? In a case of sudden need of a tool, say for prying open, we cast about and grasp the first article that appears to answer our purposes. The conventional use of the implement may be quite other than the service into which we are now impressing it, but in the present situation attention abstracts from all uses but its adequacy in the immediate situation. It is this aspect that is in the foreground of consciousness, and the meaning aspect of the implement in its normal function, if present at all, is certainly not so clear. Is the case essentially different when we come to the aspects of experience as sensory? We see that we are here in the midst of the same difficulty that we met before in the discussion of analysis. Indeed, it is nothing less than the very heart of that problem. Introspection, we are told, is the process of attending to the flow of conscious processes as conscious processes, with a view to noting parts and relationships between parts. A part is noted in that it stands out more clearly from the rest of consciousness, i.e., the part possesses greater attentional clearness. This part is then further scrutinized and it in turn divulges some simpler form of content. Finally we arrive at an element, say a sensation. We saw that while the psychologist starts out by saying that the sensation is the sum of all its attributes, he practically makes one of them, quality, the essence of the sensation, so that the other "aspects" become attributes of this one. We saw that under ordinary conditions quality is the aspect of sensory experience that is functionally most significant, and that we have therefore come to give it first place among the various aspects of sensation. In other words, quality is attended to and hence whatever attentional clearness may accrue to sensory experience under ordinary conditions, is in reality a clearness of quality. Whatever other aspects the sensation may present, they are in the background of consciousness. Let us examine for a moment the real import of one of the "conditions" of clearness. The most obvious of these conditions, says Titchener, is the intensity of the stimulus.<sup>89</sup> If

we introspect any of these cases in which an intense stimulus commands our attention, we find that the most pronounced character of the sensory content as it is precipitated into consciousness, is just its intensiveness. We are aware first of all that an *intense* stimulus has been presented and only after the first shock is over and the reflex adjustment of the sense-organ is complete, do we attend more specifically to the quality for purposes of further adjustment to the situation. We believe that it is only by a playing with terminology that one can escape the statement of the fact that the shift that takes place in the diverting of attention from intensity to quality is nothing other than a shift in relative clearness. Titchener writes as follows: "When we are thus attending to extension or duration we may have very hazy ideas indeed about intensity and quality; precisely as, when we are observing intensity, we may have very hazy ideas about quality and duration."<sup>84</sup> There would therefore appear to be discernible differences of clearness in the various aspects or "attributes" of one and the same sensory experience, so that the status of clearness as an attribute of sensation is anomalous in this respect, for the doctrine of mental elements could not be reconciled with a visual sensation that was characterized at one and the same time by two hues, or two tints, or two intensities.

## XII

But if it be true that within that sum total of attributes that, we are told, constitute the sensation, there may exist different degrees of clearness as regards the value of the various attributes for the attention process,—if this be true, still another difficulty would have to be faced in regard to the status of clearness as an attribute of sensation. The difficulty in question relates to the method of introspection. How do we ascertain the fact of clearness of sensory content? It was averred a while ago that we might attend to some one of the attributes of sensory experience whilst the other aspects receded into the background of the



field. Is this true also in the case of the attribute of clearness? Can we, for instance, become clearly aware that a given sensory content possesses a low degree of clearness? And if so, is the process by which we thus become aware of the attribute of clearness in any sense similar to that by which the other attributes of a sensory experience come into the foreground of consciousness? We would not raise a host of metaphysical queries in an attempt to give historical dignity and a backing of legitimacy to our question: we will therefore consider it on purely psychological grounds. The method of psychology, as of physical science, says Titchener, is observation. Yet to distinguish it from the latter, we call it introspection, whereas the observation of physical phenomena is better referred to as inspection. Still there is an essential likeness between the two methods. In matching color on the color-wheel, in determining the number of tones in a chord that is being struck, there is practically no difference between introspection and inspection. "You are using the same method that you would use in counting the swings of a pendulum, or taking readings from a galvanometer scale, in the physical laboratory. There is a difference in subject-matter: the colors and the tones are dependent, not independent experiences: but the method is essentially the same."<sup>72</sup> When we come to consider more complex mental experience, however, it would appear at first blush as if the parallel between the methods of physics and psychology could not be maintained—as in analysing the mental reaction called out by the presentation of some word-stimulus, or in an attempt to observe a feeling or an emotion. "If you try to report the changes in consciousness, while these changes are in progress, you interfere with consciousness; your translation of the mental processes into words introduces new factors into that experience itself;"<sup>85</sup> and furthermore "cool consideration of an emotion is fatal to its very existence; your anger disappears, your disappointment evaporates, as you examine it."<sup>87</sup> Direct observation of the process while it is going on in consciousness, is therefore difficult and one solution of the difficulty is to observe it retrospectively, by making a *post mortem* examination of it, as it were.

But even in cases such as these it is not always absolutely necessary to employ the retrospective method, for "(a) the observations in question may be repeated", and thus stage after stage of the emotive process may be made the object of analysis; and "moreover, (b) the practiced observer gets into an introspective habit, has the introspective attitude ingrained in his system; so that it is possible for him, not only to take mental notes while the observation is in progress, without interfering with consciousness, but even to jot down written notes, as the histologist does while his eye is still held to the ocular of the microscope".<sup>73</sup> So much for the method of psychology according to Titchener.

Now let us examine the process by which we become aware of clearness as an attribute of sensory content. We saw how in the course of everyday experience either quality or intensity of sensation might become functionally important and attended to. Thus in the case of an intense stimulus suddenly breaking in upon us, we are aware at the first moment primarily of its intensiveness, and it is only after the first shock is over that we turn our attention exclusively upon its quality in our endeavor to adjust ourselves to this new factor that has been precipitated into the situation of the moment. If our purpose at the moment were the gathering of psychological data, we would have, then and there, the material for it. But our purpose happens to be to get ahead with the day's business and we therefore deal accordingly with the object that had served as an adequate stimulus for that mental experience in which clearness attached first to the intensity and then to the qualitative aspect of a certain sensory content. In attending to the quality of the stimulus for the purpose of discovering what it may mean, I am in truth using the method of inspection. I can continue to regard its quality and get it over and over again in a series of perceptual pulses, subject, of course, always to the limitations imposed by fatigue and by the "fluctuation of attention". So too, I could dwell upon its intensity, if necessary. One by one, these various aspects might be made to loom up in the foreground of consciousness. Transferred into the laboratory, the experimenter can introduce qualitative changes into the



stimulus and I would report change in sensory content *pari passu* as it occurs. I might be clearly aware that the sensation as it exists in consciousness possesses a very low intensity. So too, one might say, duration, and, if one chose, presumably also, extensity of sensation might become the object of our introspections in a way that would be essentially like inspection. But how is it with the attribute of clearness? Can we focus attention upon it as we can in the case of the other attributes? Here a difficulty presents itself. Introspection as regards clearness would seem to be impossible in the sense of inspection. The moment we would dwell upon the clearness aspect the content comes into the focus of the field of attention, i.e., there is a change in the aspect concerning which we would introspect. Thus it has come to pass that most of that body of knowledge that the psychologist has gathered concerning sensation has been obtained under conditions of maximal clearness; and it is one of the chief counts against the attempts to make the unanalysed content equivalent to the analysed content, for it must yet be shown whether analytic attention does not perhaps effect other changes in the sensory content besides that of clearness. But as regards clearness itself, a low degree of clearness can under normal conditions be determined only retrospectively. While I can attend without difficulty one by one to the qualities that are presented to me for purposes of introspection, until I have reported upon the entire series; and while I can attend one by one to the whole gamut of possible intensities that can be experimentally induced, and note introspectively in the sense of inspection my conscious reaction upon each one of them while it exists in consciousness;—while an observer can do these things in the case of quality and intensity, the situation is otherwise when we come to clearness as an attribute of sensation. The ordinary observer, at least, will have great difficulty in noting introspectively varying degrees of clearness without thereby bringing the content to the focus of attention, i.e., making it maximally clear. Introspection, in the sense of inspection, calm regarding of the content without thereby changing it with respect to that aspect of it with which we are for the time being

primarily concerned, is impossible in the case of clearness. He cannot ordinarily note thus the gamut of possible clearnesses while they are still a part of conscious experience. Our difficulty in introspecting (in the sense of inspecting) a sensation in a state of low degree of clearness, is in a sense similar to that which we experience when we attempt to introspect a feeling while it is still in consciousness. The feeling vanishes when we would attend to it. The unclear sensation may not vanish, to be sure, upon our turning to it, but it is changed with respect to that condition concerning which we were seeking knowledge.

### XIII

We would now ask: What are the implications of this difference in the status of one of our "attributes"? It appears that not every aspect of sensory experience can be attended to introspectively in the sense of inspection. If this be so, then it means that all that large section of our sensory experience that falls within the outer zones of the field of attention cannot be gotten at by direct introspection, but must be attacked by the same methods as are used in the case of emotion and other complex processes that are interfered with when directly attended to. In other words, if clearness be accounted an attribute of sensation, then there is one respect in which it may behave in a manner that is usually regarded as a differentia of emotional and of "complex" processes. Not that at this point we would infer from this that clearness must therefore be conceived as partaking essentially of the character of an attribute of an affective or a complex content. Only this: that it seemingly makes the status of clearness in a certain sense unique among the attributes of sensation, if we regard it as such. And furthermore it raises the question whether the noting of this fact may not have been operative as a motive in the minds of some psychologists in making clearness the attribute of some other category, either of content or of function or



activity. Thus Stumpf says, "Phenomena with their attributes are given us, stand over against us as somewhat objective, that possesses its own laws, a somewhat that we have merely to describe and acknowledge". (*Die Erscheinungen sind uns mit ihren Eigenschaften gegeben, stehen uns als etwas Objektives. Eigengesetzliches gegenüber, das wir nur zu beschreiben und anzuerkennen haben.*)<sup>69</sup> Now this means nothing other than that it is essentially of the nature of phenomena, among them sensation elements, to be present in our consciousness in such a way that they may be calmly inspected and noted while they are a part of our experience. They stand over against us endowed with a certain objectivity, governed by laws of their own. Clearness for Stumpf does not behave in this way, and it is significant that he does not make it an attribute of sensory content, but of the activity in which the sensory content is manipulated. It is the attribute of one of the *Funktionen*, viz., the activity of awareness, of apprehension.

Thus we are in a position to understand somewhat better Stumpf's doctrine concerning the relation of his phenomena and *Funktionen*. We become conscious of the *Funktionen*, in this specific case of the activity of awareness with its attribute of clearness, "by a direction of consciousness that is other than that in which we receive our knowledge of colors". He cites Locke, Leibnitz, Sigwart, Lotze, Brentano, Dilthey, Volkelt, Erdmann, and Lipps. All of these, says Stumpf, "believe that they are able to grasp the psychic life in its very weaving, whereas colors and tones are apprehended merely as contents of acts of awareness, i.e., these sensations are apprehended as contents in a special class of psychic activities".<sup>52</sup>

Let us turn now to a consideration of what may be meant by this "other direction of consciousness" by means of which the psychic activities are apprehended. The classic passage in Locke on this point reads as follows: "The mind, receiving the ideas mentioned in the foregoing chapters from without, when it turns its view inward upon itself, and observes its own actions about those ideas it has, takes from thence other ideas, which are as

capable to be objects of its contemplation as any of those it received from foreign things."<sup>88</sup> Some of the "modes of these simple ideas of reflection" are "remembrance, discerning, reasoning, judging". Let us compare this "turning of the view inward" with the method of observation mentioned by Titchener. He tells us that "the practiced observer has the introspective habit ingrained in his system", so that he can "take mental notes" and even "jot down written notes", while the observation is in progress, and that he can do this "without interfering with consciousness", just "as the histologist does while his eye is still held to the ocular of the microscope".<sup>88</sup> If the phrase "without interfering with consciousness" has any meaning here, it can mean only this: that at this point at least we could not count on Titchener's agreement with us as regards our analysis of the status of clearness, when we would attend to this aspect of some marginal experience, *qua* marginal; for we believe that it is inherent in the very nature of consciousness that the moment we would introspect, in the sense of inspect, that which is now marginal, our attempt to do so results in making it focal, and thus interferes with, changes, in a very real sense, the ongoing consciousness with respect to that very aspect of the activity that we would "inspect". But applying the phrase to our attempt to introspect such aspects of consciousness as the degree of certainty in judgment, or such an experience as denial or affirmation (*Funktionen* for Stumpf, for Titchener, very probably, "attitudes"), it can mean only this: that he can look inward upon the doubt and study it as to its psychological constitution without defeating the ends of the activity in progress, and what is more, without changing the quality of the conscious "feel" of the "attitude" in question. Stumpf, we believe, would take issue with him here. He believes that they may be "given" in a very real sense in consciousness, but "by another direction of consciousness". This we would interpret as meaning that while "doubt" as a conscious somewhat is just as truly present as is the sensory experience of coldness, it is doomed to remain forever peculiarly marginal. Let us turn now for a moment to Locke, whom Stumpf cites in



support of his position. It may be that we may get some further light there as to just what it is that constitutes this other class of psychical ultimates.

The account in Locke is too meagre to give us any basis for inferring whether or not he would say as Titchener does that we can watch the activity from the psychologist's point of view without interfering with the normal process,—but he does say that we may become conscious of the act aspect, that is, while we may not stop to formulate overtly psychological judgments concerning it, we nevertheless find that some feeling of activity, differing from time to time as the situation varies, colors our immediate experience in the course of our efforts to adapt ourselves in our world. Referring to different aspects of this activity consciousness, we may say that we have had a memory experience, an emotion, a volition, or what not. According to Locke, we might be conscious of these activities while attention was busied in the main with the materials with which we are dealing. But the activity aspect is not singled out by attention in the same way as is the perceptual content. . . . When Locke says that anyone can observe the actions of perception and volition within himself, he is without a doubt referring to something immediately experienced. These facts of immediate experience are the empirical data for the ideas: thinking, willing. While the concepts of "thinking" and "willing" may arise as a result of discursive thinking, they yet have a basis in immediate conscious experience, viz.: the "operations of the mind about its ideas, including the passions sometimes arising from them, such as the satisfaction or uneasiness arising from any thought". The "foreign things" give rise to "ideas of sensation". But besides the consciousness of such percepts and ideas, we are aware also of the "operations" of our mind.<sup>37</sup> Yet normally it would interfere with the business in hand if we were to turn to attend to these operations. To attend to the operations of the mind is not the normal pursuit of man, and these awarenesses of mental operations leads a penumbral existence off on the margin of the field in the form of vague "feels", meanings, or what not. Most often, probably, they

remain below the threshold without conscious existence. Yet at other times these awarenesses may become very vivid indeed, and if our interests have a psychological bent, these experiences yield material for our ideas of psychological categories. This elaboration into concepts is the work of "reflection" for Locke; for Titchener it probably occurs in the process "of taking mental notes while the observation is in progress, without interfering with consciousness". It is true, therefore, as Stumpf says, that Locke subscribes to the doctrine that we are conscious of, and observe in ourselves, the "actings of the mind", such as "perception, thinking, doubting, believing, reasoning, knowing, willing". "This source of ideas every man has wholly within himself; and though it be not sense, as having nothing to do with external objects, yet it is very like, and might properly be called internal sense." For Locke, then, consciousness may be analysed into percepts, memories, and imaginations (in Locke's own terminology, all these would be comprehended under the term: ideas of sensation), on the one hand, and consciousness of mental "actings" (giving rise in "reflection" to ideas of reflection), on the other. In this sense it would appear that Stumpf is correct in claiming that Locke taught the possibility of an awareness of *Funktion* ("actings of the mind").

#### XIV

Thus Locke and Stumpf. Turning to Titchener, we have seen that for him the immediately given is the percept. It is this that the psychologist analyses into its elements. Titchener is clear on this point: that the sensation and image elements that he analyses out are not given as elements in the immediate experience of the subject, but come to consciousness united into a whole, the percept. His immediately given then is that totality that Locke called an "idea". It is what James has in mind when he speaks of "the objective fact, known to us as the peppermint taste". It is my immediate consciousness of the peppermint, before I note



that it is made up of certain sensations of temperature, smell, contact. Now as to Titchener's position as regards the other category, the category of psychic *Funktion*, of mental activity. He says, "there are, in a certain sense, a hearing, a feeling, a thinking, which are distinguishable from the tone and the pleasure and the thought".<sup>93</sup> If they are "distinguishable" aspects, one might ask why they are not "attributes" in the same sense as the other "attributes", even though they be not "ultimates" as Stumpf would make them? Logically, it would be somewhat inconsistent to leave them aside, whilst demanding that certain other "attributes" which were obtained by a very similar process of "distinguishing", of analysis, or what not, be attributed to some psychological ultimate. And this is practically what he does do when he says: "Only the distinction comes to me, not as that of act and content, but as that of temporal course and qualitative specificity of a single process. . . . The way in which a process runs its course, that is its 'act', that is what constitutes it sensing or feeling or thinking; the quality which is thus in passage, that is its 'content', that is what constitutes it tone or pleasure."<sup>92</sup> Act and content are for Titchener two ways of looking at the same "process". But we ask: Are not for him the singling out of "intensity" and "quality" also nothing more nor less than "two ways of looking at 'one and the same process' "? The "acting" is the "temporal course" of his particular types of psychological ultimates, probably their "durational" aspect. The question may become of fundamental interest, however, for certain psychologists, whether these two ways of looking at the same "process" are in any way a factor in the "process". But Titchener is satisfied to analyse the "single process" into its elementary processes: sensations, images, feelings, and to describe these with reference to their "attributes". He summarily dismisses the claim of the "act psychology" by calling it a psychology of reflection, a psychology in which "logical construction has forestalled introspective examination".<sup>93</sup> He believes that "we have in the idea of 'process' an instrument of analysis that is adequate to its task, and that it relieves us from the fatal necessity of asking help from logic".<sup>94</sup>

## XV ✓

Leaving aside Titchener's imputation that the act psychology is a substitution of logic for psychology, let us turn to Stumpf and note once more the distinction that he believes to be fundamental between his phenomena and his *Funktionen*. A psychologist such as Stumpf might say to Titchener: Having admitted the "givenness", the "distinguishableness", of the act aspect, would you assert that this aspect comes under the same category as the attributes of intensity and sensory quality? That the durational aspect, the "temporal course" is sufficient to account for the manifold variety seemingly occurring as regards this activity aspect? Stumpf would affirm you cannot. No other predicate of the activity aspect excepting it be that of duration, can be attributed to the phenomenal aspect. There is a degree of clearness of apprehension, degree of certainty of judgment, etc. (c.f. Section IV above). As regards the second, Stumpf maintains by definition, that these aspects of activity, cannot be attributed to the same category as the other attributes of sensory experience. And his distinction is made on the basis of difference in behavior.

Stumpf says that his phenomena with their attributes stand over against us as somewhat objective that we have merely to describe and acknowledge. These phenomena, then, as thus defined, would, it seems to us, come unequivocally under the head of those aspects of conscious experience which could be examined introspectively in a manner which would be essentially the same as inspection as it is employed in the physical sciences, as over against retrospection. Here then is a point of departure from which we can start out and examine the status of several fundamental categories in the two psychological systems.

Titchener and Stumpf would agree in this, we believe; that the sensory and imaginal material that constitutes the bedrock of the perceptual and ideational experiences—that this sensory experience is capable of fixation in such a way that it may be "inspected" (excepting of course the attribute of clearness in the case of Titchener's "sensation elements", which Stumpf would



make an attribute of *Funktion*), in such a way that it may be calmly regarded, observations made concerning its duration, quality, intensity and any changes that occur in these aspects from time to time. Stumpf's statement concerning his phenomena would indicate agreement on this point.

On the other hand we believe that if we were to take the list of categories of *Funktionen*, of mental acts in Stumpf's sense, we should find that the attributes in terms of which they are according to him given to us, will show that these, as aspects of consciousness, must be subsumed under the second heading on the basis of behavior when attended to introspectively. They are all aspects that change or evanesce when attention would focus upon them as psychical. "Cool consideration of an emotion is fatal to its very existence; your anger disappears, your disappointment evaporates as you examine it," says Titchener.<sup>86</sup> Try to fixate the willing, judging, comparing, and the other intellectual acts, in so far as they throw any reflection into consciousness over and above the object willed, the idea judged, the contents, whether perceptual or ideational, that are compared,—try to fixate these, and the activity is balked. The degree of clearness, according to Stumpf the attribute of the *Funktion* of awareness or apprehension, cannot, we saw, be directly attended to for purposes of psychological study. The same thing holds of doubt. Try to fix attention upon the doubt as a mental somewhat and the "doubt" consciousness is replaced by something other that may be sensation or what not, but it no longer is that consciousness which everyone, when called upon, refers to as doubt. So too, the consciousness of certainty in judgment. So too in the case of that "plus" which gives to an experience memory tang rather than a perceptual coloring, or that which constitutes negation rather than affirmation—so too, in recognition desiring, etc. In all these there is a very actual consciousness that is not focal, but marginal, and that eludes us when we try to introspect it directly, in the sense of inspection, in the sense in which we seem to inspect the "object" with which we are dealing during these experiences, i.e. in the percept, the memory image, the matter-of-

fact assented to or dissented from. It is here that the psychologist appears to be under the unfortunate curse that the moment he would lay his hands directly on one of these states of consciousness it turns to dust and ashes at his touch. Try to catch the doubt, as it passes through the living consciousness, and you destroy it and come away with shreds of sensation located in muscle of head and eyelid and mouth. Try to introspect the consciousness of certainty and what just now was a very vital aspect of immediate experience turns to nothingness. You can experience it, but you cannot inspect it. And it seems it is therefore that Stumpf says that "it is by another direction of consciousness" that we become aware of the *Funktionen*. While one might have welcomed greater explicitness on this point, we do not believe that we are guilty of misinterpretation when we infer that this statement has reference to the method by which they may become objects of psychological knowledge for us. We may infer that they are intrinsically so constituted, that they may not be apprehended introspectively in the same way as are the phenomena. We are further convinced that this is the real ground for Stumpf's distinction between phenomena and *Funktionen* by the fact that he makes clearness an attribute not of phenomena but of *Funktion*—and we have already seen that clearness as an aspect of conscious experience seemingly behaved differently from the usually recognized sensation attributes when we purposed to gather introspective data concerning it. For these reasons we believe that we are justified in the interpretation just given and we shall proceed to a study of the legitimacy and the implications of a classification of psychological processes on the basis of the manner in which they behave when an attempt is made to observe them. Applying this provisional criterion to Stumpf's categories, it would appear that his phenomena would come under the head of those conscious processes that can be examined introspectively in a manner which would be essentially the same as "inspection," and our justification in proceeding thus lies in the character of Stumpf's definition which is couched essentially in terms of the behavior alluded to above.



As regards procedure, therefore, we cannot agree with Titchener that the method of psychology is essentially the same as that of the physical sciences, viz., that of immediate inspection of the material that constitutes the objects of the science; for it appears that some aspects or complexes of consciousness normally cannot be directly inspected without interfering with that aspect with reference to which we are seeking psychological data; it may be, perhaps, that the methods can be the same when we are dealing with certain aspects of consciousness, but it must be essentially different when we are dealing with these others that are "transient, elusive, slippery," those that "refuse to be observed while they are in passage." So long as "cool consideration of an emotion is fatal to its very existence," so long as "your anger disappears, your disappointment evaporates, as you examine it," so long as we must thus qualify the statement that the psychologist observes his objects in the same way as the physicist does his, just so long must we recognize a difference in behavior on the part of the mental processes that we are studying, a difference in behavior that necessitates a different mode of attack on the part of the psychologist; and we must be careful to refrain from stating propositions that may in any way be taken as general when in reality they are particular or qualified, such as "introspection is very like inspection," "in general, the method of psychology is much the same as the method of physics," "the method of the physical and the psychological sciences is substantially the same."<sup>74</sup>

## XVI

Following this line of immanent criticism of our psychological systems, we have come to the distinction between phases of conscious experience that are amenable to immediate survey, and other phases that under normal conditions elude inspection for psychological purposes, that cannot be focused upon without changing or destroying them. By means of this distinction let

us examine the several psychological categories and let us note just what happens when the conscious experiences designated by them are attended to. There is the *Funktion* of Stumpf, the "attitude" of Titchener, the meaningful percept and idea—all to be examined in this manner; and finally the "sensation" of current psychology, which seemingly has in common with Stumpf's phenomena that it may be examined, attended to, "inspected," without changing it or interfering with it as a conscious "process."

## XVII

Referring to the experience of doubt which Locke and Stumpf would designate as an "acting of the mind," as a *Funktion*, we saw that it may be definitely an aspect of conscious experience, yet when attention turns from that which is doubted and tries to catch the doubt itself, it will surprise not the doubt, but perhaps certain muscular sensations mediated by contractions of the facial muscles. There are to be found nowhere in the literature, since James' inimitable chapter on the will, finer and keener introspective accounts of just such "catchings" of these fleeting mental states, of "attitudes", than those recently given by Titchener in his survey of the "experimental psychology of thinking".<sup>96</sup> On the side of investigations of muscular expression belonging to various forms of intellectual activity, there is excellent material collected by Sancto de Sanctis in his "Mimicry of Thinking". But the objection is unanswerable that these kinaesthetic sensations that attention lights upon when it pounces upon such a subtle psychosis as a state of doubt, are not the psychic equivalents of the state itself. As Titchener says concerning emotion: "a group of organic sensations is, after all, a group of organic sensations; palpitation of the heart, is not, in itself, the emotion of dread, and blushing is not, in itself, the emotion of shame."<sup>81</sup> Concerning recognition, again, which is essentially of the nature of *Funktion*, Angell says; "In all instances of con-



scious recognition however, it must be remembered that the *mental act* of explicit recognition is something unique; something which is not simply synonymous with the accompanying conditions which we have been describing."<sup>1</sup> In the case of emotion (which the *Funktion-psychologen* rank among the psychic activities) we find the problem already attacked. A theory such as the James-Lange theory of the emotions avers that in this total state the emotional tang is given, in a large measure at least, by the sensory back-stroke arising from certain organic and muscular reactions that have been reflexly set up in the organism. The facts at the basis of this theory are ascertainable by means of the "pouncing" above described and by the method of objective observation. The "pouncing" reveals certain organic and kinaesthetic experiences; objective observation of the person during the emotional state itself shows certain objective movements, and apparatus properly applied would reveal certain circulatory and respiratory changes which tally with the subject's introspective account of what was present at the time when the emotional aspect of the total experience was "pounced" upon. Now in using these data in the explanation of the emotional psychosis, the psychologist does not affirm that the consciousness of the analyzing experience is the same as the emotional phase itself; but he does believe that he has grounds for assuming that the sensory stimulation that functions in mediating the "sensations" precipitated by the analysis, was operative in the original state and lent color to it. The modern psychologist is too conscious of the "Jabberwock of the psychologist's fallacy" to be guilty of committing it at a point where it is so easily detectable as here. He realizes that the emotion is not the equivalent of sensation *a* plus sensation *b* plus certain affective elements, etc., that are the products of analysis,—but that the emotion was experienced differently, not under conditions of analytic attention ready to note any organic or kinaesthetic sensations that might arise, but as a unified conscious reaction upon a stimulus that is an adequate provocative of that particular form of racial response.

The method of investigation of the consciousness of intellectual

*Funktionen* and of "attitudes" must be essentially the same as that in the case of emotion. The introspective data gathered after the manner described by Titchener, the objective expressive signs accompanying the different types of concentration and intellectual process, as given by deSanctis, introspective observation (in the sense of retrospection) as to how far the changes in the pattern of the percepts and ideas, that are at the focus of attention, may contribute to this consciousness of mental activity,—these will constitute an analytic account of the activity consciousness. And while it is thus analytic, such an account will not fail to do justice to the fact that the "feel" of the activity consciousness as a real vital experience appeared to consist in a somewhat quite other than merely the consciousness of the sensory factors just described. Indeed, such an account will recognize that while it is necessary to attribute some function to kinaesthetic stimulation *and to changes in the content at the focus of attention*, in bringing about the consciousness of psychic activity—this function will yet be different in the original experience than under conditions of analytic attention. One difference in behavior of the sensory factor is this, that just as in emotional experience, it is not at the focus but at the margin of field of attention. All considerations that were urged a while ago on this point must be taken into account. . . . To determine these differences in the sensory content under different conditions of clearness, i.e., of focal and marginal apprehension, is one of the problems that is just now confronting psychology. Another difference is this: that in the original experience these various stimuli functioned in evoking an unanalysed unified response of consciousness. And, we believe, closely related to this, is the third difference. The difference in the "feel" of these stimuli in the original and in the analytic experience. In the original experience this sensory stimulation gave rise to a different "feel" from that which arises in analytic attention: there it signified doubting, affirming, negating, desiring, rejecting, attending, purposing, analysing, believing, discriminating; here it signifies so many sensory-"elements"-precipitated-in-pursuance-of-our-



attempt-to-discover,-to-know,-what-doubting-affirming,-purposing-really-is. It is this "meaning" or "feel" aspect, we believe, that Stumpf hypostatizes as his awareness of psychic *Funktion* which for him is "immediately given" in the same sense in which his "phenomena" are immediately given.

We trust that we will not be misunderstood in designating the consciousness of *Funktion*, of act, a meaning. It will be better perhaps to leave this term to express the analogous aspect of percepts, ideas and concepts, and to speak, in the case of the *Funktionen*, of the "feel" of the act, without of course, implying necessarily the presence of affective factors in this "consciousness of act". But the problem is for us essentially the same in the case of the "feel" of the mental act, and the "meaning" of a percept or idea. It suffices here to note that in the case of the consciousness of psychic *Funktionen* and of attitudes, when such arises within the total consciousness, it is the analogue of the meaning aspect in the case of percept or idea consciousness. It is this that is changed, that evanesces, that will not suffer immediate fixation.

### XVIII

Let us turn now to an examination of the percept and idea at the hand of our provisional criterion of behavior under conditions of immediate fixation. I glance over a page before me and a word catches my eye. The consciousness of the word is a percept. There is a presentation and it comes to me meaningfully. If I continue to dwell upon its meaning, this appears to remain the same, only it becomes what we are pleased to call: more explicit. Images arise in consciousness organically connected with the meaning. The totality is the percept. Analytically there is the sensory stimulus, the visual impression of the letters on the page. Added to this there may be in consciousness an auditory image of the word, and kinaesthetic images, or even sensations, of its enunciation. But this is not all, there is the meaning. The visual impression, the auditory image, the kinaesthesia;—these

are not the meaning—they “call up” the meaning. Dwelling upon this meaning aspect results in making “explicit” what before, at the first glance at the word, appeared “implicit”; and the process of becoming explicit is the unfolding of a new perceptual and ideational complex, germane to the initial ones, yet not the same. This new complex may again be analysed into sensory or image elements with a halo or fringe of meaning. Try to fixate this halo or fringe and once more it becomes explicit in the form of another idea and so our attempt to fixate the meaning as a psychic content leads us ever on to other though related ideas. The attempt to introspect the meaning aspect of percepts and ideas, then, is impossible in the sense of immediate inspection. The point we would stress here is only this: that the attempt to “catch” the meaning results in the coming into consciousness of a new ideational complex with its new meaning—or else you find yourself contemplating the objective stimulus, *qua* stimulus, that had given rise to the original percept—or else you “come to” from out of a period of seeming nothingness.<sup>3</sup>

## XIX

But let us see what happens when we attempt the analysis by concentrating attention not on the meaning aspect of the percept, but upon the stimulus aspect. We must remember that in the ordinary perceptual experience there is no differentiation of these two aspects, and it is only because in problematic situations the two have become differentiated, that we assume that every actual percept of ordinary experience has these two aspects. The experience in which the distinction first comes to consciousness may be described as follows: Say that we are looking at a word on a page and fix attention upon its visual form, upon its sound, upon our enunciation of it. It carries with it its accustomed “meaning,” but presto! we suddenly say: “Curious—that this collection of visual things, this sound, these enunciatory movements, should mean *that*.” If we continue to look at the word or contemplate



its sound, or the feel of it in our throats, its meaning becomes more and more effectually estranged from it. Attention is busied with noting parts and relations in the sensory complex, and this thing that for us was ever so familiar now becomes a monster of strangeness. New associations flash through our minds that are a result of our attention simply to the form of the word.

It is in experiences such as these that the psychological distinction between stimulus and its meaning has its rise. For many persons, children especially, this process of divorcing the auditory, visual and kinaesthetic stuff, both sensory and imaginal, from the "meaning" of a word possesses a great fascination. This process, this act of separating, may therefore become a veritable habit and can be operative not only in the case of words, but also in the case of the perception of the common objects of daily life. It is this that the modern mystics have made the central feature of their method of reaction upon the experience that the life of our day yields them. It is thus that they re-introduce into their world the sense of mystery that for the common run of men is fast becoming an unknown thing. The extent of scientific control of our objective world has become so great that small margin is left for arousing reactions of wonder, awe and mystery. Yet by the apprehension of the significance of the psychological process just outlined, the modern man and woman of the "mystic temper" has found the way that leads back into the world of mystery, a world more wonderful by far than any wherein dwelt their predecessors of early days, for the modern mystic enters the world of beauty not through a narrow range of experiences as did the mystic of old; no, every experience of the common life is to-day the gateway that leads thither. . . . But we shall return anon to this relation between "stimulus" and "meaning."

The citation of cases of the genesis of the distinction between stimulus and meaning is not made for the purpose of leading up to a discussion of what meaning is, but rather for the purpose of noting what happens when attention tries to analyze the percept by focusing upon the presentation aspect. We saw that focusing

attention upon the meaning aspect resulted not in new light on what meaning "really" was, but tended to bring into consciousness other though related ideational content. We see now that attention to the stimulus aspect likewise tends to disintegrate the original percept, divorcing the stimulus from the original meaning and bringing it, the stimulus, to consciousness in a new way; i.e., it acquires new meanings that arise in consciousness with the new pattern into which the stimulus falls under our continued inspection. And if our interests are psychological, the stimulation will take on the meaning of "sensations" and "images" that have certain "attributes" with reference to which we may examine them. The old meaning has fled and instead there is the new one that accrues to the stimulus through the new situation and its dominant purpose of psychological analysis. The meaning is gone, but the "sensations" remain. We see therefore once more that now when the distinction between stimulus and meaning has already become ours and we attempt to get at the percept by fixating attention upon the stimulus aspect, the original experience is changed in the process, the original meaning evanesces and we find that analytic attention is contemplating a congeries of "sensations," or in the case of the idea, an "image"-complex.

So our attempt to "inspect" a percept or an idea results in the precipitation of "sensations" in a process analogous to the one in which we erstwhile attempted to fixate an aspect of consciousness giving us the "feel" of some mental "activity", an awareness of hesitation, of doubt, of concentration, or what not. There we saw that the "feel" evanesced and that attention was focused either upon "organic attitude and its kinaesthetic representation,"<sup>96</sup> or else there was an immediate memory of that phase of the perceptual and ideational process that was going on in the original experience at the moment when the "feel" of activity was present. So, too, here, in the case of our attempt to fixate the percept we find that it is impossible to introspect in the sense of "inspection" without interfering with the conscious activity that is going on. The "meaning" evanesces and we find that attention is busied with the contemplation of the "sensations" that



are mediated by the stimulus, and of their configuration and "attributes."

## XX

Here, however, in our search we have come upon something in the way of consciousness that seemingly can be examined, in the words of Titchener, by a method that is substantially the same as the method of the physical sciences. In the words of Stumpf we are now dealing with sensations, one of the classes of phenomena that "stand over against us as somewhat objective, that possesses its own laws, a somewhat that we have merely to describe and acknowledge." And so for the third time we return to a consideration of that factor in consciousness that, above all others, appears to many of us as most palpable, most substantial and least elusive. Yet its palpability, substantiality, relative stability, may be only seeming; though compared with other aspects of conscious life, it appears like a great rock into whose shadow we may ever return, from our wearisome chase after the psychical. But *πάντα ρεῖ* and "the eternal hills are little by little breaking up and wearing away," and in that "great rock" changes, too, may be relentlessly going on. Figures aside—let us examine likewise the behavior of the sensory aspect under conditions of introspective attention with a view to discovering in what sense, if any, it may be said that it can be "inspected" without introducing changes into it, without interfering with it.

Let us begin by taking Titchener's example illustrative of what is for him unambiguously a case of sensory experience. "Take one of the familiar puzzle pictures, a picture which represents, we will say, a house and a garden, and somewhere in which there is concealed the outline of a human face. As you search for the face, the contents of the whole picture are at the conscious focus. Suddenly you find it: and what happens? Why, as you do so, the picture drops clean away from the focus; the face stands out with all imaginable clearness, and the house and garden are

no clearer than the feel of the paper between your fingers. The experience is very striking, as I have described it: it is more striking still, if the face baffles you, and you go off on false scents. For every time that you think that you have found the hidden outline, the picture slips from you,—slips, to come back with a mental jerk as you realize your failure." The "mental jerk" is exquisitely descriptive of the way in which a new meaning attaches to a stimulus. For Titchener, to be sure, it is a change of clearness in the sensory content, yet the fact that he describes is patent enough. What before was, at most, vague, is now made clear, and its clearness comes in with a mental jerk. Now it is in this moment of mental jerk that we become aware of the fact that the previous awareness of this content was far vaguer than just at this point of entrance of the interpretation in which the part-content is unified and brought to the crest of the wave of sensory attention. The point to note is this: that the sudden coming to the crest on the part of the part-content may become the occasion of the psychological judgment that the sensory content which is the basis of the new percept is now clearer by far than just a moment ago. And now, having found the face in the picture, the psychologist might ask, does the face, or rather, does the sensory experience that constitutes the percept "face", do these sensations continue at the initial level of clearness or not? Since Titchener has not carried the psychological description further, we shall attempt it ourselves. Having found the face, we may do one of two things: dismiss the whole matter and turn to the business of life, serious or otherwise; or we may continue for a while longer to attend to the face. Again, if we do the latter, we shall discover later, upon retrospection, that one of three things has happened. 1. We suddenly found that the sensations meaning "face" have wandered off, and instead we are thinking of other things; further retrospection may discover to us, perhaps, the associative nexus that lead from "face" to the present ideational content. 2. Or we note that attention continued to focus upon the sensory material before us and specifically upon that part of the content that was welded together in the face-



percept, but that we did not rest content with the initial total face-meaning, and went on to attend to nose, eyes, ears, mouth, etc. If in so doing we saw something unusual in the conformation of any of these parts, say in the shape of the nose, we note, retrospectively once more, that such apprehensions seem to come home to us with another mental jerk, slighter perhaps than the original one, yet nevertheless with more clearness than attaches to one which is representative of an accustomed type. 3. Or in the third place we may find retrospectively that we have done neither of these things after choosing to busy ourselves further with the face, rather than to return to the duties of the day. We may have looked again, and then again, at this face, trying perhaps to get once more some subtle general impression that was imbedded in our original perceptual reaction upon the part-content. We continue to look at the face and succeed in getting the impression sought,—and then we find that we have gone off into a doze, or have even fallen asleep, and are aroused only by some sudden stimulus, more or less intense, external or internal. The many methods of putting one's self to sleep by "watching the sheep jump over the stile", or "looking at the tip of one's nose",—all have this element in common, and their effectiveness in many instances cannot be questioned.

We note this third type of general behavior also in the case of another actual experience, viz.: in one of the methods used to induce hypnotic sleep. A bright metallic ball may be placed before us and we are told to center our whole attention upon it. Pursuant to this command we focus upon it. We are to "think" of nothing else, but just fixate the ball. Very well, we note the form, then its size,—just try to "apprehend" them. If attention would go off on the track of associated ideas, we nevertheless feel a "pull" back to the ball. The distribution of light and shade upon its surface "strikes" us. Then we note the color, etc., but soon the possible ways of apprehending the ball without calling up other objects is exhausted and so once more we go through the various ways of apprehension just mentioned. While the perceptions were thus being repeated over and over, conscious-

ness as a whole sinks ever to a lower level, and unless in some way the total situation becomes operative by arousing in us some strong impulsive reaction such as is involved in the thought of the "unworthiness" of this our conduct in which we are giving ourselves over into the control of another—unless something of this sort happens, we soon are in an hypnotic sleep.

Again, in the case of ambiguous drawings, when one meaning is "in", and the other is "out", the two alternate rapidly enough, but never is the stimulus apprehended in both ways at once. It is another question how it is that we may "know" that the other meaning is possible. And it is beside our purpose to touch upon that here, except to note the fact that in the complex consciousness, it would appear that at times we do have some sort of awareness of the potentiality of this other perception. It may be that this is analogous to our awareness of the whole to which a part belongs, but this problem will occupy us elsewhere. Here let us note only that the sensory stimulation tends to release alternately two perceptual reactions. In these cases in which the sensory stimulation attended to is coterminous in the two interpretations, the same "mental jerk" is experienced as in the case of the puzzle picture in which a part was abstracted in the perception of the hidden face. Since the sensory field that is involved in the area of maximal clearness remains the same in the case of the ambiguous figure, we can there interpret the facts only by saying that that which with interpretation A had been made clear, had in the meantime become vague and is once more brought to maximal clearness with the coming in of interpretation B.

Now a "sensation" too, behaves as do those supposedly "complex" objects of perception. In our attempt to "inspect" it, Titchener tells us, we may perceive it now with this "attribute" in the foreground of attention and now that.<sup>84</sup> Whenever any aspect of the sensory stimulation arouses consciousness to a maximal degree, it was always a case of a consciousness of that particular aspect of the stimulation coming as its meaning. The stimulation that finds no reflex pathway over which to discharge



7 in terms of established reflexes calls out the attention reflex as its response and this phase of the impeded activity is precipitated into consciousness as the total situation: "what's that?" and thus opens the pathways for possible discharge by way of the cortex. This coming to clearness in consciousness on the part of the various aspects of the "sensation" is in every way like the "mental jerk" by which Titchener describes the coming of a new percept. In the period just following the jerk there is no awareness of a subsidence of the clearness of the "sensation", but such a decrease is inferred from the fact that in the new pulse of perceptual reaction, the content once more becomes maximally clear. The attempt to keep the sensation in consciousness, as in the case of the metal ball experience, results eventually in a lowering of the degree of clearness of consciousness to the threshold of sleep.

Since the attributes behave thus in every way as do the meanings of "complex" percepts, coming now one to the focus of consciousness and now another, there is some ground to doubt the claim of "sensation" that must have all its attributes in consciousness or none,—to the place of a psychological ultimate. For if in the case of ambiguous drawings it is not necessary for the two possible meanings to be in consciousness at the same time as "percepts",—if indeed it is not only not necessary but in the nature of the case impossible to have the two present as "percepts" at one and the same time—but that one of them, if it be represented in consciousness at all can be present as "idea" merely, then it must be shown why the various "attributes", which otherwise behave in every way as do the several meanings of ambiguous objects, should form an exception in this one respect: their inseparable presence in consciousness.

If it be true that we can single out some one "attribute" of sensation, say the brightness of a visual experience, and focus upon it, and that "we may have very hazy ideas about quality and duration"<sup>84</sup> as when a bright light suddenly flashed before us on a dark night,—if in that case brightness be the attribute focused upon, and our "ideas" of the other attributes may be very, very vague, how are we to determine the point of vagueness beyond

which they may not go, unless they would drag the whole sensation down below the threshold? The more restricted attention is, at this critical moment of our experience, upon the intensity phase, the nearer the danger of its forcing the other aspects below the threshold of consciousness—and presto! the whole light sensation would have to disappear, if it were true that the “nullifying of any attribute annihilates the sensation.”<sup>84</sup> But it is far from our purpose to caricature a venerable concept. We are voicing only a growing conviction that the concept is in need of reconstruction and reinterpretation.

We find that the “attributes” of “sensation” behave just as do “meanings” in the case of ambiguous drawings. The different aspects come to consciousness with the same “mental jerk”; when one “attribute” is in the foreground the others recede, just as two interpretations of a stimulus in the case of the drawings; and like the attempt to keep some particular conscious state in which a certain meaning is imbedded, static, so, too, the attempt to keep consciousness narrowed down to some particular “attribute” of the “sensation” results in a stultification of the process or the annihilation of consciousness.

We conclude therefore that “attributes” are but some of the meanings which the sensory stimulus may arouse in consciousness. They are the products of a process of abstraction. And if the quality appears to be the “body” of the sensation, this is attributable, we believe, to the fact that the qualitative reaction, the putting over against each other of the various qualities of a sense department is the more habitual one.\* The meaning of quality, therefore, when the sensation is observed introspectively, is the one that strikes us most forcibly. On the other hand the day we first experience an inkling of the distinction of saturation from the other qualitative aspects of visual sensation, is a “new” day for us; the color experience is henceforth different from that of former times, and this increase in richness is synchronous with the rise of the distinction. We need not necessarily have names for these new aspects, but the point is

\* Cf. above, Section X.



that it is in the analytic process that the new aspect comes to consciousness—and to say that it was always present is to blink the fact of difference for the sake of theory. The coming of the subtler aspects into the field of consciousness dates from the day of their first singling out and their presence comes home to us, often, before we have a name to affix to our new way of reacting to the stimulus. This new way of reacting is the essential thing to be noted. To say that the differences existed before they were noted, is tantamount to taking the position of those who affirm the distinction between psychic reality and conscious actuality (Kölpe), phenomena and *Funktion* (Stumpf), content and act (Brentano). (We might add here also Wundt, who speaks of inherent agreements and differences in "psychical processes" on the one hand, and of the "comparing activity by which we perceived" the relations. This latter activity "is different from the agreements and differences themselves and additional to them".)<sup>107</sup>

Our point here is only this: that the actual sensory experience cannot be regarded as being a function only of the physical and the physiological processes of the peripheral stimulation and afferent nervous impulses, but also of the "set" of the nervous system as a whole. If the saturation aspect is to be the "attribute" of the "sensation" as a *conscious* experience, then in the case of those who maintain that the conscious response to one and the same type of sensory stimulus is different before and after they have been put into the attitude in which they become aware of that aspect in a definite way,—this aspect cannot be "attributed" in the same way to the earlier and later sensory responses as *actual, conscious* experiences.

Hypothetically we might suppose that the beginnings of the "attitudes" that are the condition for this modification of experience as sensory, are to be found in certain reflex or instinctive responses.\* These, accompanied by certain emotional reactions, might thus affect the machinery of consciousness. But this would be quite other than an "immediate" cognitive reaction by way of

\*See below, Section XXXIII.

the cortex to this particular aspect, and would probably be denied by all who deal in elementary sensory "ultimates"; yet it may well be that such a statement of the psycho-physical processes involved in sensory experience will some day come to be regarded as being more serviceable than our altogether too simple conception of psychical element.<sup>110</sup>

The "sensation", that by definition "comes into consciousness only and always with all its attributes", is a logical construct, in the same sense in which every other "ideal object" is a logical construct, and psychologically it behaves just as every other "complex" object. It is in the conscious reactions now to this problematic situation, now to that, as they arise in the breaks in more or less automatic habitual responses, that the various "attributes" that constitute the sensation come to consciousness. The admission that within the "sensation" itself there may exist two degrees of clearness, is sufficient to make it complex. Its very existence is dependent upon the functioning of a selective activity and it depends upon the situation what aspect is to be selected out. And since the "sensation" turns out to be a complex object, that behaves like every other object that may come to consciousness with different shades of meaning, then the dwelling upon it, in the sense of "inspection", is impossible without interfering with the "process" as it normally would go on, for it must result either in bringing out new "meanings", aspects that were not in consciousness in the same way before, or else, as in the case of all attempts to keep "meanings" static, in an annihilation of consciousness.

## XXI

Pursuing this line of criticism we come to believe that not even in the case of the "sensation" with its attributes can we introspect in the sense of inspection without interfering with, or modifying, the on-going process. To observe a sensory experience results in putting the "sensation" into a new setting. The



system of associations into which it is received is quite other than that in which it existed in the original experience.<sup>99</sup> Yet one might say that that is the very thing that was wanted. However differently we may have reacted to the stimulation under other conditions, it is under the guidance of a psychological purpose that one would discover what the facts concerning the simplest sort of conscious reaction to a given stimulus "really" are. Let it *mean* psychical element, if you will, but in narrowing down consciousness to the sensation experience, and noting that it, after all, was complex, have we not found a type of process that was about as simple as could be, viz., the various attributive aspects of sensory experience? And further, one might say, given a psychological purpose to start with, we could then have the conditions necessary for attending to a psychical process that was elementary, simple, in the first place, and secondly was one into which introspection would not be introducing changes while the observation was in progress. In other words we should have the conditions given for a case in which introspection would be very like inspection. . . . This would verily be a case in point. The conditions would be very similar to the case of the attempt to induce hypnotic sleep cited a while ago. Only here, the command from without is replaced by the purpose within. Yet the two have this in common: they would function effectually in cutting off all avenues of association excepting the one that means: a particular sensation attribute. Having thus stultified mental activity by means of the purpose, we fix upon the attribute; and having fixated it, what next? . . . We try to get it over and over again, just sheer awareness of quality, say. We cannot vary the monotony by noting the other attributes that we have been accustomed to note with regard to a stimulus, so the apprehension of the one aspect simply repeats itself. We do not deny that we are constructing a hypothetical case, yet we have some basis for it in concrete experience. Who has not at times sat staring at the wall of his room, his mind a "perfect blank" except for the awareness of the color of the wall? The color would become clear in repeated perceptions, along with the name, perhaps, as an auditory

image, or as an incipient enunciation of the word. There appears to be somewhat of a perceptual pulse,—whether or not this be a function of the “rhythm of attention”, so-called, need not detain us here. Another instance from the class-room may also be a case in point. We go to a session of a class immediately after partaking of the noon-day meal. We are drowsy and would doze off if it were not that we might be called upon to respond, and that bit of “knowledge” is more or less effective in keeping us awake. But if it be a lecture, we have a more difficult time of it. We soon cease to form the associations that it is the lecturer’s purpose to call up in our minds. The effort is too great, especially if it be a technical mode of expression that is being used. The words soon begin to strike us merely as sounds. But for the sake of courtesy we try to keep up the appearance of attention, and we come back to the fading auditory stimulation with a jerk. We shall not here try to analyze out the difference between those “comings back” that carry with them the “feel” of being a function of the stimulus, and those that appear somehow to be due to the inner pulling together resulting from a vague appreciation of the social situation. Suffice it to say that purpose and stimulus each appear to influence the pulses of perception each in its own peculiar way. Now the sound seems to have come back of itself, now it appears to have been called back. These meanings appear to attach to the percept; they seem to be incorporated into the experience of the moment. But the point to note is this: in the successive pulses of perception the sound consciousness becomes ever vaguer and vaguer, and we are soon off in the land of nod. This we realize only after a well-intentioned neighbor has pinched our arm.

To return to the hypothetical case, in which the observer is required to fix attention upon one aspect of the sensation and to continue to it. Here we do not alternate, as in the case of staring at the wall, between the more “fundamental” quality aspect and the subtler intensity aspect, but we stick to quality. Have we reason to believe that the content at the focus will behave differently in this case where the controlling factor is a psycho-



logical purpose, than when consciousness was under no guidance of a purpose to single out that aspect, but responded as a result of habit to this more "fundamental" aspect? In the class-room experience we note the presence of both these factors that might be instrumental in introducing changes into the temporal course of consciousness. In the case of staring at the wall we had not the purpose of keeping the tint "there". Retrospectively, we note that the color came and went and that each time the "jerk" of its coming appears to have become weaker. There was no "pulling ourselves together" to attend. It is only *after* the experience that we become aware of the fact that consciousness had narrowed down to so small a perceptual field and that it had arrived at so low an ebb. . . In what way the presence of a purpose would color this experience need not detain us here—whether as a vague realization of the situation, or as expressed in voluntary control of the process of accommodation of the sense organ, or in the mere "feel" of the accommodatory adjustment. But if it should be found that when this inner factor is present the sensory process at the focus takes a different course than when it is not involved, then we would once more have in this last instance of observing a single aspect of sensory experience likewise a case in which the attempt to introspect it while it is in progress, introduces changes into the "process" itself. . .

Now introspectively, we believe, the way of staring blankly at the wall—with the bare awareness of the color quality as the sole "object" at the focus of consciousness—is different in its course, at least, from the experience in which its perception is under the guidance of a purpose. The color consciousness in the first instance might be described, perhaps, as a case of simple apprehension; the pulses of apprehension have a certain quality of their own. The second case, of trying to keep the stimulation in consciousness, has in it all those elements that differentiate "active" from "passive" attention. But in both cases it might be rejoined, it is the context that changes, and not the content at the focus. In our hypothetical case we might have both types of attention present, the content coming in now in such a way that

its coming-in has the "feel" of being a function of the stimulus, and now again in such a way that it has the "feel" of being a function of the central factor. But the content itself, some might say, the quality that is perceived, is not altered by it. We would answer that even though this should be shown to be true, the process, the temporal course, the duration aspect, is different under the influence of a purpose from that in the case of a passive awareness of the object. If then these differences between active and passive attention exist, then must we not admit that even here in this case of observation of the behavior off an "attribute" of sensation, the content is influenced by the presence of the psychological purpose to "inspect" the process? The perceptual pulse is no longer that of the coming back in rhythmic flow of a sensory content dependent simply upon the conditions of the stimulation of the nervous elements at the periphery,—but it becomes complicated by those factors that distinguish the course of a process that manifests itself under the conditions of active attention, from that of passive awareness. It is the "process" character of conscious experience that is thereby changed. So long as the psychologist continues to cite duration as one of the "inseparable attributes" of his sensory element, he cannot maintain that the purpose to observe it introduces no changes into the element. And in order to maintain that it is a "real" item in experience, he believes that he must make duration one of the "inseparable attributes", for, says Titchener, one cannot conceive of a sensation that has not some duration. If such an influence upon the temporal course in the attempt to inspect an "attribute" of sensation takes place, in so far as we regard it as a *real occurrence* we must conclude that the presence of the psychological purpose modifies, here, as elsewhere, the on-going consciousness.

But to conclude; as against Titchener our analysis has led us to note that no actual conscious process can be "inspected" without making the purpose to inspect and the judgment resulting therefrom a part of the activity—and when thus injected into the activity it is side-tracked from its course and the end whither



it had been tending. The purpose to introspect, in the sense of "inspect", does verily modify the ongoing process.

As against Stumpf, we conclude that in so far as the concept of phenomena does not possess as a necessary *Merkmal* their being in consciousness they cannot be said to "stand over against us". In so far as they are conceived to become at times "contents" of consciousness, they cannot be said to stand over against us with *all* the likenesses and differences that might possibly be noted but go unnoted. They cannot be said to present more meaningful aspects than are actually discriminated. The conscious experience of a sensory character that occurs in an intensity discrimination cannot be said to be the same as when a qualitative discrimination is made in response to the same inducing stimulation. In the realm of experience as sensory, as in all other realms, enrichment in meaning comes through the discriminative reaction of consciousness. And this is the point of James' contention when he maintains that in no sense can the product of analysis, as a conscious somewhat, be said to be already contained in an earlier experience in which no analysis occurred. The physical stimulation as a physical process may be the same, the conduction path to the cortex might possibly be the same, but this is a very different matter from the statement that the conscious experience arising in response to this stimulation is the same. The lights of the city street of Stumpf's illustration, in so far as we become aware of them as phenomenal content, cannot be said to be the "same" under the two conditions of analytic and of marginal attention. In so far as they were marginally noted as merely so many bits of brightnesses in the field of night, they cannot be said to have been phenomenally the same as when under conditions of analytic attention they are noted to differ in hue, some being the yellow of gas lamps, others the blue of electrics. And we are here remaining entirely within the bounds of Stumpf's own system, for we are in no wise referring to differences in the "feel" of *Funktion*, in the two cases, but are restricting ourselves entirely to the phenomenal aspects of the lights.

## XXII

The psychologist cannot unqualifiedly assert that it is possible to observe conscious processes from a psychological point of view without thereby interfering with the normal process. To assert that this is possible is to blink the fact of the influence of the central factor, call it whate'er you will, active attention, purpose, *Einstellung*, determining tendency, or what not. It is rather for psychology to recognize that it is at this very point that it can put in its "licks" in contributing its share to the control of our "inner" world, in the same way as the physical sciences have given us control over the world of things. To realize that the psychological purpose is but one of many possible determining tendencies that might be set into operation in determining the "what" of the "that" in consciousness,\* is the beginning of psychological wisdom. The "that," the "object," falls into parts that are already habitual ways of conscious reaction. If these fail us, the "that," the stimulus, calls out other, analytic reactions; it is now scrutinized in the light of the way it affects the sense organs, for we must know "what" the "that" that baffles us, "really" is. Hence the sensory analysis. The meanings that come to us in terms of this analysis are the beginnings of the reconstruction of the object, to use a well known functional phrase,—the object that came to consciousness meaning a baffling "that," in the reconstruction under the influence of past experience becomes a "what," and whatever else it might mean besides, now means at least this much: these, and these, and these, "sensations." It is just because the earlier conscious reactions to the "that" were inadequate, that the analytic reaction is called out, and this is the point at which James's contention might be recalled that the analysis into these and these sensations is anything but "contained" in the earlier reaction to the stimulus. Once the psychologist begins to realize that there is such a thing as psychological analysis and observation going on in the normal business

\* Compare Bühler's distinction between *Intention* and *Wasbestimmtheit*, i.e., between "thatness" and "whatness"; also Woodworth's distinction twixt sensory qualities and "thinghood." See below, section XXXI.



of life, he will set about studying the rise of psychological distinctions as a part of the process of adaptation, he will seek to note just how "observations" of conscious activities changes them, and thus he will get his point of application in the control of mental process. The natural scientist does not merely describe, he seeks to control. The chemist does not merely want to know about chemical elements, he wants to be able to make them do his will, and as a result we have the impressment of chemistry into the service of human ends, just as the physicist's mastery of matter gives to humanity the control of the world in terms of physics. So, too, biology is attempting to develop eugenics as a science. In like manner psychology can render its quota to the control factors in human life by showing up the mechanism by which changes are introduced into the course, the flow, of consciousness. To note that the psychologist can introduce changes in consciousness, can "interfere" with it, is the fact to be "pounced upon", and studied. He should ask how are these changes brought about. A body of knowledge of how to introduce these changes is the beginning of a new era in human culture. We instanced above the rise of the habit of dissociating the sensory stimulation from its meaning, the habitual conscious reaction from its stimulus. We noted that the modern mystics are making this the central feature of their method. Now an adequate account of this method, of this psychological process of dissociation for the purpose of allowing new associations to rise, would give us an element of control in our psychic life that would be of value not merely for mysticism, but more broadly for science and the affairs of common life. It would give us the tool by means of which men might literally limber up their minds. . . . It is such a body of knowledge, also, that a truly scientific psychotherapy must make its point of departure.

We note then that our provisional criterion that we sought to apply to the types of experience designated by various categories in our psychological system, for purposes of classification, fails us. We cannot classify on the basis of conscious states that suffer and those that do not suffer immediate "inspection". We

saw that the injection of the psychological purpose into a normal activity inevitably interferes with the on-going process, i.e., differentiates it from an otherwise similar process into the course of which no such psychological purpose is introduced. This means, then, that the "taking of mental notes while the observation is in progress, without interfering with consciousness", is impossible. It means further that Stumpf's characterization of the "phenomena" that "stand over against us as somewhat objective, that seeks merely to be described and acknowledged", does not apply to anything in the way of actual consciousness that we have been able to discover.

### XXIII

We now come to the question: How have we come by the category of a static mental "element," a somewhat "that stands over against us?"

There is an ancient philosophic distinction between "sense" and the "understanding". The senses were supposed to furnish the raw material which the understanding works over into ideas, and these in turn into the concepts that constitute our mental furniture. And what is more, we find that there are some among us who believe that this working up is not merely inferred when we find the furniture there in consciousness,—no, we may also become aware of the very process itself, we can hear the whirring and buzzing of the manufacturing, as it were. The raw material that comes in, is conditionel in large measure by the constitution of the sense organs and by the manner in which they are affected by the things of the outer world. But whatever the metaphysical conception of the status of the in-coming material may be, it is supposed to possess a certain fixity of inner constitution. It is the phenomenal reflex into consciousness at the point where the individual comes in contact with the "world" in which he lives. It is not the "world" itself that comes in, nor a duplicate copy of it, but that which comes in is an "appearance", phenom-



enon. Over against this phenomenal content is the understanding. Spinoza and Descartes's distinction twixt extension and thinking recurs in Stumpf's categories of phenomena and *Funktionen*, for "*das uns gegebene Tatsachenmaterial zeigt eben schon in der Wurzel ein Doppelantlitz*".<sup>55</sup> The philosophic ancestry of the distinction throws some light on certain features of contemporary conceptions.

The modern sensation is in part a descendant of one side of this duality. We shall not here trace the line of descent,\* but would point out that it is discernible, for instance, in the statement of the sensation as the sum of all its attributes. To it still adheres much of that relatively fixed character that belongs to the phenomena over against the more labile thought ingredient of consciousness. And in Stumpf's making the fact of being in consciousness not a necessary *Merkmal* of the phenomena we see a logically consistent carrying-out of the distinction. The phenomena need not necessarily be in consciousness in order to constitute them phenomena. The understanding, in the case of Stumpf's system, one of the psychic *Funktionen*, notes elements here and others there, i.e., focuses upon them. The phenomena are there, waiting to be acknowledged and described. Hence the doctrine of the possibility of unconscious phenomenal contents.<sup>66</sup> The fact of being noted, the fact of coming to the focus, in a word, the fact of clearness, is not, in such a system, an attribute of the phenomena, but of the process of apprehension. The phenomena may remain the same when apprehended marginally as when attended to focally. Relations and likenesses and differences exist between the phenomena that may or may not be apprehended in the operation of the psychic *Funktionen*.<sup>56</sup> Phenomena and *Funktionen* are independently variable. The peppermint experience before analysis and the peppermint-analyzed-into-its-elements have the same phenomenal content—what has changed is the *Funktion*. On the other hand, the *Funktion* may remain constant whilst the phenomenal content changes, as when, lost in thought, at the twilight hour, I am still aware of my surroundings through the

\* See below, Section XXXIV.

visual impressions coming in. I give them, presumably, an unchanging degree of marginal attention, i.e., the *Funktion* remains constant, so, too, the meaning that accrues to the phenomenal content; but the phenomenal content that is apprehended is changing without my becoming aware of the change.<sup>66</sup> These are examples illustrative of the thesis that phenomena and *Funktionen* are independently variable. What remains the same and unaffected by these phenomenal differences is the *Funktion*, in Titchener's terms the "attitude" that we have assumed in response to the stimulation arising from the objects gradually changing under the influence of twilight illumination. It is assumed that certain conscious *phenomenal elements* are likewise changing, but the "clearness" of apprehension with reference to them, and the manner in which they are apprehended (the "pattern" into which they would have to fall as a result of the activity of the *Funktion des Zusammenfassens*) may remain constant. Such a characterization is possible only in a system in which sensory phenomena with all their "attributes" may exist in consciousness without being meaningful. Just bare attributive changes are here supposed to have been going on, presumably within consciousness, and yet called out no meaningful reactions. In the phenomena relations of likeness, of difference, etc., may exist without being noted. There are even unnoticeable differences;<sup>66</sup> and nothing would appear to stand in our way if we would posit, say, sensations that remain below the threshold. Furthermore, "the fine distinctions in the content of the sensations that are ours are not always directly present to us. We must differentiate once more between phenomenon and thing-in-itself within the realm of the phenomena themselves."<sup>67</sup>

So much for this conception of sensory phenomena as over against the understanding. The world of phenomena is not the world of physics, nor yet is its existence dependent upon the presence of the phenomena in consciousness. We study the phenomena under conditions of focalized attention, but the attributes that we discern in them and the relations existing between them are in no sense dependent upon consciousness for their



existence. Stumpf would make the science of phenomenology a discipline of its own.<sup>69a</sup> Phenomena are the starting point for both physical and psychological science, but only the starting point, for the real matter of the sciences lies to either side of the phenomena. The real business of psychology is the study of operations of the *Funktionen*, and he carries out his conception consistently within the limits of his system. At one point an interesting question might arise: Are we to conceive the transition from focally apprehended sensations over into marginal and subliminal sensations as a gradual decrease in clearness of apprehension merely? And if so, would the hypothetical sensations below the threshold have at least physiological representation,—specifically in the same parts of the nervous system as the sensations that have conscious existence, i.e., in the cortex? If subconscious phenomenal representation be denied to stimulation that functions in releasing subcortical reflexes, the distinction would appear a trifle arbitrary, for it would rest on purely physiological grounds, i.e., the distinction between unconscious cortical paths and subcortical paths. If, on the other hand, the distinction be not drawn somewhere, then all stimulation of the physiological organism might claim sub-liminal representation in the phenomenal nether-world of the psyche. Thus it would not be an illegitimate interpretation of Stumpf's illustration to affirm that the stimulation arising from the presence of the lights of the city streets functioned a large part of the time in releasing purely unconscious reactions resulting in my keeping to the path as part of the total adaptive process in an accustomed environment. On the first supposition viz., that only cortical stimulation is to have phenomenal representation, whether conscious or unconscious, the lights would at times, under a focal and marginal apprehension, have conscious phenomenal representation,—at times merely sub-liminal representation, in so far as the reactions resulted in the form of unconscious cortical reflexes, and at other times no phenomenal representation at all, whenever the cortical reflex should become short-circuited by way of a thalamic or even some lower correlation center. Yet this is not the interpretation that

Stumpf would seem to make in his illustration, for he says: "Surely, we must say to ourselves that just a moment ago there also were light and sound impressions of the same sort and in the same spatial and temporal relations as we now perceive them," i.e., under conditions of focalized attention. The reaction of "just a moment ago" may have come under any one of the three neurological possibilities just mentioned, including the case where the stimulation does not release a cortical but a sub-cortical, let us say, a thalamic, reflex. If we are right in this, then stimulation functioning in releasing not cortical but sub-cortical reactions also might claim sub-liminal phenomenal representation. But the moment we take this position it means that we must allot to all stimulation of the physiological organism, of whatever sort, whether from within or without, phenomenal representation. We would thus obtain a wealth of phenomenal content; but whether any rational need justifies us in affirming that the unapprehended sensory materials that by hypothesis are to be assumed as the unconscious phenomenal representation of stimulation that functions in releasing automatized sub-cortical reflexes,—whether we are justified in affirming that such hypothetical sensations are "the same" as the sensations of conscious experience, is open to grave doubt. . .

The phenomena, then, do not exist in consciousness as relatively stable "thats" that may be inspected. In so far as they do come to consciousness in the concrete experience they are inextricably bound up with the *Funktion* of apprehension, awareness, or what not, and it is only by logical abstraction that, in the first place, phenomena and the apprehending *Funktion* may be differentiated, and, in the second place that the phenomenon, say a specific sensory experience, can be characterized as a somewhat that stands over against us that asks merely to be described and acknowledged. Such a characterization of the phenomena is a result of logical abstraction and it is in no sense true of the actual conscious experience.

Such being the philosophic antecedents from which springs the present day conception of "sensation", the descendant of that



which is "apprehended" by the "understanding",—it is small wonder that we get into difficulties when we try to "attribute" to the sensation some of the characteristics, properties, or what not, that in that ancient distinction had come to be assigned to the other side of the division, as when, for example, we try to make the fact of clearness, the way in which the "understanding" apprehends the "phenomena", an attribute of the phenomena themselves. With the reaction against the "faculty" psychology came the desire to state consciousness in purely phenomenal terms,—to state it "as it is, existentially". The sensations of our day are the phenomena of the ancient distinction, reconstructed to suit an attempt at a purely structural statement of consciousness. They seek to cease being the rigid entities that they once had been while still a part of the dual system, and take upon themselves some of the characteristics that in those older systems and in the contemporary systems of Stumpf and others are attributes of the *Funktionen*. Yet when we are mindful of the origin of the abstraction we can somewhat more readily appreciate the difficulties into which we are thus led. Taking up into our definition of sensation the statement that sensations never mean—a function that in the dual system had been abstracted from the conscious experience and attributed to the understanding,—and having taken over this *Merkmal* of being meaningless, and at the same time eliminating from our psychological system that which erstwhile performed this function, we find that our method of procedure works havoc within our psychological conceptions themselves. We call the sensation a "process", hoping thereby to emphasize the fact of change and to eliminate the rigidity of the "phenomena". Yet logically we defined a sensation as the sum of all its attributes, and so long as we retain such a definition, a change in any of these attributes makes the sensation *ipso facto* another sensation, so that we do not get a *sensation* that is a *process*, but a *series of sensations* that might, perhaps, constitute a *process*. But it can hardly be said to constitute that so long as we retain the definition, given above, and the postulate of sensations as meaningless;<sup>80</sup> for by the definition

each group of "attributes" constitutes an element in itself, and the postulate prevents the consolidation of these into a "process", for to do that would be to establish relation between the various parts of the series, and the introduction of relation would constitute meaning. For the various parts, or elements, of the series would be each other's context; and context is that which constitutes meaning;<sup>80</sup> hence a process in which changes occur would necessarily be itself a meaning. We have already noted how the attempt to make the fact of clearness an attribute of sensation, leads to other logical incongruities. . . Thus we see that the attempt to give an intelligible account of consciousness in terms of the "phenomena" that, however we may seek to alter the conception, betray all along the line their one-sided origin in that earlier abstract distinction between "sense" and "understanding",—that such an attempt leads us into hopeless confusion. In its continual insistence that it is a "process" and not a static somewhat, the modern sensation reminds us of the words of the Queen in Hamlet: "The lady doth protest too much, methinks."

On the other hand, the abstraction of the "process" character, of the "active powers", from the "phenomena", leads in other systems to a hypostatization that is equally illegitimate or equally legitimate, as one chooses. Here very soon "act" and the meaning that accrues to a situation by virtue of the act (for the "phenomena" are without meaning), came to be differentiated, and as a result we have not merely *Funktionen* over against phenomena, but also the meanings that are the "correlates" of the *Funktionen*. These correlates are the *Gebilde* in Stumpf's system.<sup>64</sup> In other systems there are analogous concepts, such as *Formen*, *Gestaltsqualitäten*, etc. In Stumpf they are not conceived of as quite so independent of the *Funktionen* as are the phenomena, but when we turn to Bühler's discussion of Stumpf's system, we find that the conception of the *Gebilde* has already come to partake more of a content character and is subsumed by Bühler under the category of *gedankliche Inhalte*, thought contents, as over against the *Empfindungen* and *Vorstellungen* that constitute the *sinnliche Inhalte*, sensory contents.<sup>22</sup> And differen-



tiation once started, there is no end of new categories: *Bewusstseinslagen*, *Regelbewusstsein*, attitudes, *Bewusstheiten*,—to name but a few. In how far these are *Funktionen* that are in consciousness, yet are chary of being called *Inhalte*, contents, but nevertheless exhibit some leaning in that direction,—there is little unanimity. This chariness on the part of the *Funktion* to be classed with the *Inhalte* and its protestation that it is nevertheless “immediately given” is sufficient earnest to us that it is the counterpart of the activity phase, of the process character, abstracted from the totality of conscious occurrence. The manifold of new categories is truly staggering,—and all protesting vehemently that they are “non-sensory” or “imageless” or “pure” thought or activity. Scant courtesy is paid the Sensation by those who have transferred their allegiance to the new god, and surely we must take off our hats to the few trusty fighters still defending the altar of the venerable Concept of Sensation, that since Locke and Hume, has been regarded as the liberator of mankind, as the beacon of empirical science, as the “ultimate” of human experience.

#### XXIV

Yet in the minds of some the question may arise whether anything is gained by the invocation of new categories to be characterized largely in negative terms as “non-sensory,” so long as we are in a state of doubt as to the positive content of the concept: sensory. It is only when we have a more or less definite meaning to attach to “sensory” that we can be sure of what the newly introduced “elements” or other categories are *not*. In other words, we would begin a definition of the problem by a re-examination of the relation of the concept: sensation, to these other “non-sensory” categories as it comes out in a comparison of several recent writers on the subject.

We have noted that in the actual experience of everyday life not all aspects of “sensations” are of equal importance, sometimes

it is the qualitative aspect, sometimes the intensity character, that looms large; and we further pointed out that the determining factor lay in the situation as a whole. In each specific case it might be a function of instinct, habit, or of purpose. In the words of Angell, "we shall always find that this sensation is determined by the demands made upon the organism by the environmental situation, i.e., that it is functionally determined and that it will vary with each specific situation with which the organism will have to cope. . . . It is never a mere sensation in general. It is always this *specific* sensation produced by certain particular, momentary organic conditions."<sup>5</sup> Even though the stimulus be the same, the actual conscious character of the sensory aspect of experience that arises in response to the stimulus will vary from time to time as the situation or the purpose varies. "One may of course hypostatize this sensation and, dissociating it from its particular surroundings, regard it as a type of a relatively static structural element, for which specific function is a secondary and unimportant consideration. But the actual sensory experience which constitutes the prototype of this hypostatized sensation, is not only capable of being viewed as an expression of functional activities, it cannot be correctly viewed or accurately described in any other way."

A number of writers dwell upon this point that the actual conscious character of the sensory experience is dependent on the functional activity that is going on at the time being, and that it is not a fixed, staring, stable, static, immutable somewhat. Yet most of them are chary of departing from the venerable dogma concerning the "inseparability of the attributes"; instance recently: Watt, in *The British Journal of Psychology, Volume IV.*, Part 2, on *The Elements of Experience and their Integration*; or *Modalism*, and Aveling, in the same volume, on *Relation of Thought-Process and percept*. Both emphasize especially the variability in the relative functional importance of the several attributes. That the various "aspects" may vary from time to time in attentional clearness even Titchener teaches. And Meumann, likewise, writes as follows: "Beachten wir die Inten-



sitäten, so treten die Qualitäten, die räumlichen und zeitlichen Verhältnisse für unser Bewusstsein zurück, beachten wir räumliche Verhältnisse, so gilt dasselbe von den Qualitäten, Intensitäten und Zeiten. Beachten wir die Zeitverhältnisse, so treten alle qualitativen, intensitiven, räumlichen Theilinhalt aus dem Blickpunkt des Bewusstseins; beachte ich Muskelpannungen ihrer Intensität oder Qualität nach, so verschwinden relativ für mich ihre zeitlichen Verhältnisse."<sup>40</sup>

But when we turn to Külpe, we find that he comes very close to cutting the Gordian knot in affirming the separability of the attributes for "actual consciousness", even though they continue inseparable in some strange nether-world of "psychic reality".

In connection with an account of certain experiments on abstraction, Külpe notes this fact of difference in the sensory aspect of experience in so far as it is a function of the dominating purpose of the moment.<sup>34</sup> In these experiments groups of symbols were presented, the elements of which differed among themselves in form, in color, and in arrangement. Instructions were to focus now upon the number of elements in the group, now upon their arrangement, now upon their form, now upon the colors. Concerning the different ways in which the content was in consciousness under the influence of the various types of instruction or purpose, he says: "Für die Erklärung ist zunächst wesentlich, ob die gefundenen Unterschiede . . . auf Unterschiede der Gesichtsempfindungen oder der apperzipierenden Faktoren zurück zu führen seien. Werden Z. B. die *Elemente* oder die *Farben* anders gesehen, wenn entsprechende und wenn heterogene Aufgaben vorliegen, oder werden sie anders aufgefasst, ohne dass die Gesichtsempfindungen selbst in beiden Fällen einen erheblichen oder wesentlichen Unterschied darboten? Darauf kann, wie ich meine, nach unserem Protokoll und der ganzen Versuchsanordnung nur gesagt werden, dass der Unterschied lediglich oder doch wenigstens der Hauptsache nach in der Auffassung, nicht aber in den Empfindungen liegen kann. Mag ferner in manchen Fällen ein rasches Vergessen stattgefunden und die Aussagen über die der Aufgabe nicht entsprechenden

Teilinhalt beeinträchtigt haben, so ist doch zumeist, wie ich auf Grund des Protokolls feststellen kann, die Auffassung selbst unmittelbar eine andere gewesen für entsprechende und für heterogene Aufgaben . . . Die Farben erscheinen (in the case of "*heterogene Aufgaben*", i.e., in problems in which the question of color was irrelevant) tatsächlich nur als gleich oder verschieden, als dunkel oder bleiben ohne Ortsbestimmung . . . Am stärksten zeigt sich die apperzeptive Natur dieser Tatsachen darin, dass Aussagen über *Elemente* oder *Farben* überhaupt, in jeder Richtung unterblieben. Die Versuchsperson ist z. B. im Stande eine Figur richtig zu beschreiben, ohne über die Beschaffenheit der sie begrenzenden Objekte irgend etwas unmittelbar im Bewusstsein erlebt zu haben."

"Ich lege wert darauf zu konstatieren, dass in den Abstraktionstatsachen unmittelbare Bewusstseinsphänomene vorliegen. . . . Die Versuchspersonen glaubten tatsächlich die Eindrücke in der angegebenen Unbestimmtheit *zu sehen*, bzw. tatsächlich keine Farbe, kein Objekt u. s. w. wahrgenommen zu haben. Da nun die Psychologie als Wissenschaft den Empfindungen regelmässig bestimmte Eigenschaften beilegt, sie aus bestimmten Teilinhalten bestehen lässt, so geht daraus hervor, dass sie zwischen den psychischen Vorgängen und dem Bewusstsein von ihnen unterscheidet."

"Dass dieser Unterschied gemacht werden muss, etwa in demselben Sinne, wie man zwischen physischen Vorgängen und dem Bewusstsein von ihnen unterscheidet, dass mit anderen Worten die alte Lehre von einem inneren Sinn mit der dazu gehörigen Gegenüberstellung von Bewusstseinswirklichkeit und Realität für das Gebiet der Psychologie eine zeitgemässe Erneuerung finden muss—das ist das prinzipielle Ergebnis, das ich meinen Versuchen entnehmen möchte. In Anschluss daran definiere ich die Abstraktion als den Prozess, durch den das logisch oder psychologisch Wirksame von dem logisch oder psychologisch Unwirksamen geschoben wird. Die wirksamen Teilinhalte sind für unser Denken und Vorstellen die positive abstrahierten, die unwirksamen aber diejenigen, von denen abstrahiert worden ist.



Für unser Bewusstsein giebt es demnach abstrakte Vorstellungen, für die psychische Realität giebt es nur konkrete Vorstellungen."

We have quoted the section at length because we believe that it contains much that will elucidate the relation between "sensation elements" and the "non-sensory components" of perception and thought, and also much that will bear on the problem of content and function. Let us note first that when the sensory *qualé* is irrelevant to the problem, the subject believes *tatsächlich* to have seen no color, or else the various colors appeared merely as being alike or different (*als gleich oder verschieden*), or else have merely a certain brightness value. In other words, Külpe believes that after all allowance has been made for possible errors due to memory, there is a very actual abstraction from visual quality in the conscious response to a stimulus under the influence of the *Aufgabe* in which the purpose is, say the determination of the character or of the arrangement of the elements or units in the presentation. The quality actually does not enter consciousness, yet there may be some awareness of brightness or of sameness or of difference. The subject may be able to "describe accurately a figure or contour, without having had any immediate conscious experience of the attributes (*Beschaffenheit*) of the delimiting objects". We believe that we are justified in interpreting this as meaning that what comes to consciousness under these specific conditions created by the *Aufgabe* is something of the nature of *Gestaltsqualität*, and that, while none of the "attributes" of the delimiting and of the delimited fields came to consciousness, the awareness of some difference between the two became the basis for the apprehension of the quality of form . . . In the conscious reaction, then, there is an abstraction from irrelevant aspects of sensory experience, that under other conditions, specifically under the influence of another *Aufgabe*, might have come to consciousness. Such abstraction would appear to be all of a piece with those cases of everyday experience in which the intensity of the stimulation appears to come to consciousness abstracted from the specific quality, as when a bright light is suddenly flashed before us on a dark night,—the case on which we dwelt some time ago.

If this be true, then we believe that we are on the track of the distinction that Külpe and others make between *Bewusstseinswirklichkeit* and *psychische Realität*. He tells us that the differences in the content that are noted in the different reactions to the stimulus resulting from the change in purpose, are to be characterized not as differences in the sensations, but as differences in our apprehension of them. For, "since psychology as a science regularly assigns to sensations certain attributes, allows them to be constituted by certain part-contents, it follows that we must distinguish between psychic processes and our consciousness of them". The "psychic processes" in this case are the underlying sensory processes, and, we take it, these processes, as sensations that are "the sum of all their attributes", are to be postulated as "psychic realities" but not as "conscious actualities" in this series of perceptual experiences. We would not impute to Külpe a point of view that may be foreign to him, yet it may not be amiss to indicate here a point of contact that he would seem to have in common with functional psychology. He says, "I would define abstraction as the process by which the logically or psychologically efficacious (*Wirksame*) is separated out from that which is logically or psychologically inefficacious (*unwirksame*). The efficacious part-contents are for our thinking and ideating (*Vorstellen*) those that have been positively abstracted, the inefficacious those that have been abstracted from. For our consciousness, therefore, there may exist abstract *Vorstellungen*, for psychic reality there can be only concrete *Vorstellungen*." Sensations and images as they come to consciousness are here referred to under their aspect of *Wirksamkeit*, efficacy. It is the function that they are serving that determines their conscious character. Those aspects (*Teilhaltungen*) come to consciousness that are germane to the solution of the problem. It is the *Aufgabe* that determines how the objective stimulation is going to be reacted to by consciousness. The inefficacious aspects are abstracted from; they need not even come to consciousness marginally.

Sensory experience would certainly appear to be regarded here from the point of view of function. A like significance



would seem to attach to the characterization of consciousness as actual, *Bewusstseinwirklichkeit*, as over against the psychic reality (*psychische Realität*) that must be ascribed to the sensations as they are "in reality". The distinction could not have been clothed in these words haphazardly by Külpe and therefore the choice of the word "actuality", *Wirklichkeit*, is significant on account of its functional import as over against the more static meaning of *reality* that is ascribed to the "merely" psychical. Here, then, we would at least seem to have common ground with the functionalist so far as we are dealing with "conscious actuality" and not with an abstract "psychic reality". For conscious actuality part-contents (*Teilinhalte*), i.e., "attributes" of sensory stimulation, may become abstracted under the influence of the demands of the moment, and constitute the "content" of thought and idea. Such content, then, would have its rise as a response to functional demands and Angell speaks to the point when he says that "it cannot be correctly viewed nor accurately described in any other way". It is merely a matter of terminology when Külpe calls the "part-content" thus functionally effective "abstract"; in this sense all content of actual consciousness might be referred to as "abstract", but this would involve us in the larger question whether all consciousness is essentially selective and we still have to face the problem of the images that have the appearance of mere "by-play" and of "sparks struck off by thought in its progress".<sup>100</sup> Here let us dwell only upon the implication that form or arrangement sensory *qualé*, intensity, quantity, may each be "abstracted", and become the effective content of actual consciousness. Sensory experience in actual consciousness, then, is not a mechanical sequence of sensations as they are described by "psychology as a science", but it is rather a looming up of now this aspect, now that, all in response to needs arising in the on-going activity

## XXV

Kölpe states that the differences in the varying perception of the presentative material, parallel with the variation in the *Aufgabe*, are not differences in the "sensations" (*Empfindungen*) but differences in the mode of apprehension (*Auffassungsweise*). We are here face to face once more with the dual system with its distinction of sense and understanding. The "inner sense" selects, apprehends in some mysterious manner, the "psychic processes" of sensation, and it is only so that they are lifted from the plane of mere "psychic reality" to the level of "conscious actuality".<sup>35</sup> With such a dialectic, to affirm that the "sensations" remain the same, Kölpe can mean only that the stimulation is the same, and such a statement contains no reference whatever to characteristics of sensations as "contents" of consciousness. The sensation has "psychic reality" ascribed to it; yet it would save a world of misunderstanding if we would treat it frankly as a physiological category. And yet Kölpe speaks of the concrete *Vorstellungen* of psychic reality as over against the abstract *Vorstellungen* of actual consciousness. We would ask: Is it possible for us to experience the concrete *Vorstellung*, or not? It appears almost futile to discuss this point until we are given further information concerning the character of psychic reality, but it is necessary to appreciate the difficulty, at least, before we can go on to a discussion of "imageless contents". The hypothetical psychically real sensory processes that are manipulated in sundry "acts" of consciousness, are evidently regarded in some sense as "given", before they are apprehended by consciousness. Then under the influence of the purpose there is in the process of apprehension abstraction from irrelevant psychic reality. The relevant comes to actual consciousness as the functionally effective content. But nevertheless a part of the constitution of the *Vorstellung* is conceived as being peculiar to itself and not attributable to the action of the apprehending act. Intensity and sensory quality belong to the "sensation" in psychic reality, even though either of these aspects may be abstracted from by actual consciousness. For purposes of statement within a psychological



system this statement of psychic realities that are apprehended by an act of consciousness might have some justification, but unless carefully qualified the impression might arise that somehow there are certain "sensations" coming to consciousness and that "parts" of these, *Teilinhalte*, are then apperceived in an "act" subsequent to their appearance. The ascription of "psychic reality" to these hypothetical sensations and their attributes prior to their appearance in consciousness tends to increase the probabilities for the operation of this source of error. One thing to note is this: Whatever the constitution of the hypothetical sensations of merely psychical reality, the sensory experience of actual consciousness is not to be conceived as their copy. We must recall always that these hypothetical sensations are logical constructs and that they are in no sense brute "givens", but are the postulates of "psychology as a science". Sensory consciousness may be varied, yet the "sensations" remain the same, so long as the objective stimulation and the conditions under which it operates, remain constant. "Sensation" and "consciousness of sensation" are two categories that must be carefully kept apart, and it is here that we must locate much of the cause of misunderstanding in the non-sensory imageless thought controversy.

We note then that the category of sensation for certain psychologists is not a category of consciousness at all. Actual consciousness for such psychologists as Stumpf and Külpe is conceived as being essentially functional. "Sensation" is subsumed under the category of phenomena, into the conception of which the characteristic of "conscious" does not enter as an essential *Merkmal*, or else *Empfindung* is characterized as a "process" of "psychic reality", which, undefined as it is, has the negative differentia, at least, of being put over against "conscious actuality". While there may be eminently good reasons for doing this, it would save much misunderstanding to make it frankly a physiological category; then it would be more easily detected when it got mixed up in explanations in which it masquerades as a conscious somewhat.

## XXVI

To return now to "conscious actuality" and to the abstract *Vorstellungen* that are found there. We saw that this conscious actuality as a whole and the abstract *Vorstellungen* that appear in it as part contents were characterized by Külpe in terms indicative essentially of functional efficacy. It is in this consciousness that we gain that experience which, under the influence of a psychological purpose, we later systematize and as a part result may obtain the conception of a relative static structural element that we hypostatize as the "sensation" or the "image" of psychology. But in the meantime conscious actuality continues to do business with the "abstract" (?) shreds of sensory experience and does it in a wonderfully efficient manner. The psychologist, having finally laboriously constructed the "real sensation", comes back to conscious actuality and is dissatisfied with his "element." The element that he has constructed will never do for purposes of describing what goes on in this "conscious actuality" (*Bewusstseinwirklichkeit*). Indeed, he becomes convinced that there is "something more" in consciousness that is nothing like the concrete *Vorstellung* of psychic reality, postulated by psychology as a science. So he thrusts aside his construct, the sensation and image of psychic reality, and proclaims that conscious actuality is largely "imageless" and "non-sensory". Forsooth, the sensations and images seldom enter this consciousness, and when they do, they are "troublesome", they hinder rather than further thought. Indeed Woodworth notes that they partake essentially of the nature of "by-play", that they "have more the appearance of sparks struck off by thought in its progress than thought itself".<sup>102 26</sup> Or again, Bühler concludes that "a look into our protocols suffices to say that anything that appears so fragmentarily, so sporadically, so occasionally, in consciousness as the *Vorstellungen* in the course of our thought experiences, cannot be regarded as the carrier of the closely-knit and continuous content of thought".<sup>12</sup>



## XXVII

And what is it that our psychologist abstracts from experience as the new "element" to put over against the "sensation"?

We saw that color quality, according to Külpe's results, may be abstracted from. "*Die Versuchspersonen glaubten . . . tatsächlich keine Farbe . . . wahrgenommen zu haben.*" The color qualities do not come to consciousness; "*die Farben erscheinen tatsächlich nur als gleich oder verschieden*", or else their white values find representation, they appear merely as *dunkel*. But the factor that may come to consciousness in these cases is the figure i.e. the form or arrangement. We might conveniently refer to this as the form-quality and point out its kinship with the *Gestaltsqualität* of other writers. It is this form-quality that comes to consciousness here in Külpe's experiments, as a result of the operation of a certain *Aufgabe* in response to certain sensory stimulations. The form is the "content" of consciousness; it is the abstract *Vorstellung* which can occur only in conscious actuality, but never in psychic reality, for psychic reality contains only concrete *Vorstellungen*.

Now in all these cases of abstraction the differences noted do not lie, for Külpe, in these *Empfindungen*. He says: "We must say that the differences can lie solely, or at least in the main, not in the *Empfindungen* but in the *Auffassung* (apprehension)." From the making of this distinction we can infer only this: that the *Empfindungen* in which no change occurs, although characterized as psychic processes, are nothing other than the peripheral physiological stimulations of the sense organs. In physiological terms it means that very probably under the different modes of apprehension there is no difference in the activities of the end organs, perhaps also in the activity along the conduction paths up to the cortex, though this might turn out to be questionable even as an hypothesis.<sup>110</sup> But the *Empfindungen* as contributing nothing to these differences are not conscious *Empfindungen*. They have all the attributes that a structural psychology assigns them, but they are not in consciousness. Consciousness is a new function that supervenes. It is only then that the *Empfindungen*

are precipitated into "conscious actuality". In this dialectic the fact of consciousness, then, is what is meant by the "inner sense". Here we have, once more, the phenomena of Stumpf, and the *Funktionen* of consciousness over against them. And now in conscious actuality, under the influence of some purpose, those part-contents of psychic reality are abstracted that are relevant to this purpose. And so it comes to pass that the form-quality may under certain conditions come to consciousness abstracted from the other possible *Teilinhalt*. This is an abstract *Vorstellung* of consciousness as functional (*Bewusstseinswirklichkeit*),—it is the part-content (*Teilinhalt*) that is functioning (*wirksam*) in the problematic situation. I am told to note the form and forthwith the "form quality" is apprehended and all things else are abstracted from, i.e. I perceive form or pattern of arrangement in the sensuous presentation. And for Külpe this actual pattern consciousness is a product of the process of abstraction; it is not a function of the *Empfindungen*.

For Stumpf this pattern consciousness would be a case of *Gebilde*,—we believe that we may interpret it as such. If so, the fact of falling into pattern would be characterized as *Funktion*, the pattern consciousness itself would be the *Gebilde*. We saw in the course of our earlier discussion that Stumpf held that the *Gebilde* was not given in the same sense as the phenomena and *Funktion* were given, but that the *Gebilde* was characterized as being the "correlate" of the *Funktion*. It is not a new phenomenal content. Now we saw that Bühler, in a review of Stumpf did a certain violence to Stumpf's system by classing the *Gebilde* among the *gedankliche Inhalte* (thought content) as over against the *sinnlichen Inhalten* (sensory content). But once only does Stumpf refer to *Funktion* as content, and we are inclined to believe that that was a slip of the pen.<sup>56</sup> The logical ordering of the categories of his system is this: The immediately givens are (a) contents, viz.: phenomena and relations, and (b) the *Funktionen*. The forms, *Gebilde*, patterns, are not a third type of given, in the same sense as these other two, but are the "correlates" of the *Funktionen*. What is given need not necessarily be a



"content". For that is immediately given that "strikes one as immediate matter of fact". The fact of falling into a pattern may be, according to Stumpf, a fact in consciousness, but he would probably have us make it a fact of the "how" of consciousness, not of the "what", of content. The correlate of this "how", the *Gebilde*, the pattern, is not, says Stumpf explicitly, a new phenomenal content. It is for this reason that we believe Bühler does violence to Stumpf's system in making the *Gebilde* a "thought content", in spite of the one instance that we mentioned in which Stumpf refers to the *Funktionen* as *Inhalt*, thus putting them on a level with the phenomena and the hypostatized sensations of psychic reality.

It is the form quality, pattern quality, *Gestaltsqualität* that comes to consciousness as abstract *Vorstellung* in the abstraction tests, that Bühler and Woodworth hypostatize as another form of content. The form quality is referred to by Woodworth as percept quality and is the "meaning".<sup>103</sup> And this, as a static somewhat, robbed of its correlation with the *Funktion* in which it comes into being and abstracted from the total conscious actuality, this "meaning", this way in which objective stimulation is responded to by consciousness in the percept, is ranged alongside of "sensations", *Empfindungen*, as another kind of "content" of consciousness. Thus Stumpf's distinction between phenomena and *Funktion* and Külpe's distinction between conscious actuality and psychic reality are overridden.

We are now in a position to understand more adequately the difference between Stumpf and James upon which we dwelt some pages back: the case of the *naïve* peppermint-experience as over against the experience analyzed into sensations, and the case of the actual lemonade-taste versus the lemonade-taste as being "composed" of sensations of sour and sensations of sweet. The way in which the unanalyzed experience "feels", James holds to be a "simple quality". Stumpf denies this; but the bone of contention is not the fact but the psychological naming of the fact. In Stumpf's system the "content" is the phenomenal qualities; in Külpe's it is the "processes" of psychic reality. But the

consciousness of them as "lemonade" or as "peppermint", i.e. the "form" that they take on in actual consciousness, is the correlate of a *Funktion*. The *Funktion* is here the *Funktion des Zusammenfassens*, i.e. the abstraction of the psychologist of the fact that under certain conditions a mass of stimulation is thus apprehended as a unity, which under other conditions might appear as a manifold of sensations. The form is "*das, was eine Melodie oder eine räumliche Figur oder eine sonstige, als zusammenhängendes Ganzes aufgefasste Vielheit von Erscheinungen unterscheidet von einer Vielheit sonst gleicher und gleich angeordneter Erscheinungen, die aber vom Bewusstsein nicht zusammengefasst werden.*"<sup>64</sup> The *Funktion*, of which the form is the correlate, is the fact of the occurring, the fact of the cohering; its correlate in each specific case of conscious experience, for Stumpf, is the "form". We believe that logically this is the equivalent of the "percept-quality" of Woodworth, of the *Gestaltsqualität* of Ehrenfels. James' simple quality of perception, then, arises for Stumpf when consciousness reacts upon phenomena in a definite unified way. It has its rise in this reaction of consciousness. It is the correlate of the *Funktion*. Hence to take this reaction of consciousness and to hypostatize it as a new static element would be logically illegitimate for Stumpf within the limits of his system. The lemonade and the peppermint are in actual consciousness what they are experienced to be both for James and for Stumpf, and their difference is not a difference in data, but a difference in working them up into a system. What James affirms is that the sort of consciousness that occurs when I get an analyzed precipitant of "sensations", as they come to consciousness as the result of analysis, is in no sense the same as that of the *naïve* unanalyzed conscious reaction. Stumpf's position might be restated in the form that the sensory stimulation that underlies the *naïve* experience and the analytic reaction is the same. But only that. The reaction of consciousness, however, and, we believe that Stumpf would have to admit, the whole wide-spread activity in the cortex that underlies this reaction, as over against the activity represented by the afferent path up



to the cortex that underlies the hypothetical phenomena, these are different in the two cases.

This case of the lemonade taste, though seemingly so different, is in principle identical with the case of the abstract *Vorstellung* of the form in Külpe's experiments and the consciousness of the meaning of the spoken words: "Kant's transcendental unity of apperception." All three are alike "sensory", in that their "conscious actuality" is conditioned by some form of peripheral stimulation. To say that they are "non-sensory" is only to affirm that the hypothetical sensation of structural psychology, which is "the sum of all its attributes", that is abstractly bare sensation without meaning, does not enter into this conscious actuality. In this sense the three may be alike non-sensory. But whatever principle be applied for purposes of classification, all three must come under the same category.

## XXVIII

We then ask: What is the criterion on the basis of which consciousness is to be characterized as "sensory" and "non-sensory"?

Bühler speaks definitely to the point in the case of *sinnliche Vorstellung*. It is one that can be described in terms of sensory quality and intensity, (*was durch Angabe von sinnlicher Qualität und Intensität beschrieben werden kann.*) Now if the "form" of Külpe's abstraction tests be the type of the *Gestaltsqualität* and of the percept-quality, then it cannot be a *sinnliche Vorstellung*, for it cannot be described directly in terms of visual sensory quality and intensity. "Nothing was immediately experienced consciously concerning the character of the delimiting objects," says Külpe. Hence no direct determination of the abstract *Vorstellung* in sensory quality or intensity. The *Vorstellung* in question, therefore, is not "*sinnlich*" but "*gedanklich*". That is to say, it is to be characterized as non-sensory on the score of the absence of the hypothetical abstract sensations of "psychology as

a science", the bare sensation that is a content staring you in the face, as it were, whose "being" consists in its "attributes".

Yet in the case of visual pattern or form, even if it be a case of abstract *Vorstellung*, in that there has been an abstraction from sensory *qualé* and presumably from intensity, the question arises: Might not the precipitant in consciousness be characterized as a positive abstraction of the extensity attribute? It is not that we would make a plea for this particular type of procedure, for Külpe does not in his paper characterize explicitly this form quality as *gedanklich*. It is only when we come to Bühler that this occurs. And if the elimination of all the "attributes" is necessary before a conscious experience may be designated non-sensory, then we would ask: Why does Bühler leave extensity out of account? We conclude, therefore, that the only attributes of his "sensory" experience are intensity and quality.

We have as a result this curious situation: All meaningful consciousness that has as its core intensity or quality phases, easily distinguishable, is to be labelled "sensory". But all those experiences that are built upon extensity aspects, such as the pattern or form quality and those that are built upon the order-aspect—what of these? Are they to be regarded as "non-sensory"? And what of the duration aspect of experience, as in the case of various types of rhythm? We point this out only to show that a very fundamental question has still to be faced. If we continue to employ the category of sensation in any form; if arrangement and pattern be in any way referable to extensity and duration aspects of stimulation; and if it be true that in actual consciousness there is possible this abstraction of all these various phases, then, since extensity and duration are usually cited as "attributes" of sensation, it behooves us not to pass them over without mention. It may be, to be sure, that Bühler would still characterize these as sensory as Külpe appears to do, viz. as abstract *Vorstellungen* of conscious actuality. But then Bühler should have named these attributes among the criteria of the sensory. Else he will obtain a curious crossing within his categories, and he can hardly expect the uninitiated to keep them straight. But



having stated his criterion of the "sensory" in terms of the two aspects of quality and intensity, he thus makes possible the characterization of all meanings, whether perceptual or ideational, in which the important factor is order, either temporal or spatial, as "non-sensory".

## XXIX

Having thus stated his criterion Bühler does not hesitate to characterize anything in the way of consciousness that might come anywhere near being describable in terms of sensory quality or intensity, as irrelevant. I refer to that aspect of perceptual and ideational experience which even in the absence of the purpose to introspect often comes to us in the form of kinaesthesia or kinaesthetic imagery. It is to this aspect of consciousness, we believe, that a curious quality of "humanness" is attributable that seems to belong to the conscious world of the possessors of this type of mental reaction, as over against the more "external" world of other types of mind. He says: "Man könnte ja auch versucht sein, jene sinnlichen Elemente, die wir kurz als räumliches Richtungsbewusstsein oder Bewusstsein der Änderung dieser Richtungen bezeichnet haben, mit in die Fragestellung hineinzunehmen. Doch ist leicht zu sehen, dass die räumliche Orientierung, welche die Gedanken hier und da zu haben scheinen, etwas so Variables und auch verhältnismässig Seltenes ist, dass wir sie trotz des hohen Interesses, das ihr an sich zukommen mag, hier ruhig beiseite lassen können. Auch wenn mir bei einem Erlebnisfortschritt, den man durch die Worte 'aber' oder 'oder' oder 'trotzdem' kundgeben würde, zumute ist, als ginge ich damit von etwas, was rechts vor mir steht, zu etwas, was sich links befindet, oder von etwas vor mir zu etwas hinter mir über, so kann man diese Erfahrung doch nicht ernstlich zu dem Satz verallgemeinern wollen, das reale Bewusstseinscorrelat jener ideellen Kontinuitäten sei in solchen sinnlichen Elementen zu suchen. Dazu sind sie viel zu zufällig und wandelbar."<sup>11</sup> And

this statement is not made in reference to our consciousness of percept quality, but in connection with a more general statement of the relation of this factor to his more elaborate "thoughts", where he is asking: "What are the essential constituents of our thought experiences, i.e., what are the carriers of the thought content: what is the psychically real correlate of the thought that is determined by logic?"<sup>10</sup> Now this kinaesthesia both in sensory form and as imagery that lies at bottom of this form of consciousness, comes perhaps as near as any to forcing itself home upon us in the course of normal consciousness, in the form of "mere sensation", not meaningless, to be sure, as the hypothetical sensation and image ought to be according to the definition of structural psychology, but nevertheless often loosed momentarily from the total perceptual or ideational consciousness in which it was apparently functioning, and flashes for a wee space as a distinguishable percept, a kinaesthetic "sensation". Now, this comes as close as anything to being a "sensation" in actual consciousness, a "sensation" which normally appears, if even there, only in introspective or analytic consciousness. It lies fully as close to the surface in some types of mind as does commonly the "sensation" of smell in the percept of the rose. Yet Bühler eliminates this aspect as "too fortuitous and changeful".<sup>10</sup> He concludes that the more immediately felt consciousness of seeming to go from something at my right to something at my left, etc., in connection with our awareness of certain relational words, and which in many minds is given in terms of vivid kinaesthesia or kinaesthetic imagery, is to be abstracted from. In doing this he is inconsistent. His problem was ostensibly to discover the carriers of the *Denkgehalt*, "how the function of carrying this *Denkgehalt* is distributed between the *Vorstellungen* (*Vorstellungen* to be defined as above: *sinnliche Vorstellungen*) and the *Gedanken*, and how these two are related to one another."<sup>10</sup> But he forthwith eliminates a great part of sensory experience that may have participated in the actual thought consciousness. At least he does away with the sensory aspect, yet in so far as even such sensory content has been in any way meaningful he



would divorce the meaning and make it a special sort of content, not of sensing or of imaging, but of "knowing" (*eine Bedeutung kann man überhaupt nicht vorstellen, sondern nur wissen*).<sup>21</sup> With this statement all common ground is swept from under us. The sensory or imaginal response of consciousness is conceived as a bare, meaningless, static *what*, so that even in those cases of awareness of pattern or form which might have been abstracted from the qualitative and intensive aspects of presentation in Külpe's tests, we would not have anything that as "sensory" is already meaningful, but something to which a new "element" must be added to make it meaningful. And yet, can it be that the pattern aspect referred to is conceived of as different from the *Gestaltsqualität* which is mentioned by Bühler? In speaking of it he cites an example. "As I look upon the mass of lines of some complicated mathematical figure, at first blush I am at a loss what to do with it, but suddenly something 'lights up' with regards to them. What is it that has thus 'lighted up'? Evidently the meaning of the figure; and this meaning is always something *gedankliches*, in many cases nothing other than its law of construction." "A similar thing occurs when I suddenly comprehend the construction of a machine or the plan of a building."<sup>15</sup>

We believe, therefore, that experiences such as those of the abstraction tests of Külpe and Bühler's examples of *Gestaltsqualität* are essentially the same in kind. "Sensation" would appear to have but little function in Bühler's system; sometimes it may be the 'substrate' of conscious experience; most often, however, it would appear to be quite irrelevant.

### XXX

But what may be the relation of his *Empfindung* and *Vorstellung* to his *Gedanken*? What Bühler characterizes as *Gedanken* are not the *Bewusstseinslagen* of Marbe, or the *Funktionen* of Stumpf, or the attitudes of Judd and of Titchener.

No, while recognizing this category, Bühler insists that it is somewhat quite other, viz.: the *Bewusstheiten* of Ach, which he, Bühler would rather term *Gedanken*. They are the *gedankliche Inhalte*, thought content, as over against the *sinnliche Inhalte*, sensory content. We saw that he made his sensory content the counterpart of Stumpf's phenomena, and his thought content the counterpart of Stumpf's *Gebilde*. And we already noted that in doing this latter he does a certain violence to Stumpf's system—for Stumpf definitely states that his *Gebilde*, "forms", were not to be considered as content, but as "correlates" of his *Funktionen*.

Be that as it may, Bühler notes three types of *Gedanken*, (1) the *Regelbewusstsein*,<sup>14</sup> consciousness of rule, of pattern, of construction, (2) *Beziehungsbewusstsein*,<sup>17</sup> consciousness of relation, and (3) *Intention*, which we can best render, perhaps, by the term "objective reference".<sup>18</sup> Bühler's content categories might be tabulated thus:

CONTENT	
a.	b.
<i>Sinnlich</i>	<i>Gedanklich</i>
1. <i>Empfindung</i> (sensation)	1. <i>Regelbewusstsein</i>
2. <i>Vorstellung</i> (image)	2. <i>Beziehungsbewusstsein</i>
	3. <i>Intention</i>

But when we turn to the end of Bühler's section on *Gedankentypen*, we come across another classification of content in terms of *Wasbestimmtheiten* and *Intentionen*. Every content possesses a "what" and a "that", and his types therefore would appear now to have ceased to be independent elements and to have become "moments", aspects of thought. Every content must have a *what* and a *that*.<sup>20</sup> The *what* may be sensory or imaginal, or a *Regelbewusstsein* or a relational consciousness; the *that* is always reference to an object, whether real or ideal. Aside from the consciousness of *Funktion* (Stumpf) or of attitude (Judd and Titchener), which Bühler would appear to subsume under the category of *Bewusstseinslage*, we would now have the following content categories:



- a. *Wasbestimmtheiten* (whatness)
  - 1. Sensations and images
  - 2. *Regelbewusstsein*
  - 3. Consciousness of relation
- b. *Intention* (objective reference or thatness)

We note then that the "sensation" and "image", when present, may function as one of the "whatnesses" of the thought. In this sense it is made co-ordinate with meaning and relational elements. Thus in the suddenly up-looming meaning of a plan or of a machine, that Bühler mentions,<sup>15</sup> or in the staircase figure of Woodworth,<sup>100</sup> we have such an instance. In so far as we are aware of the whiteness of the paper and the blackness of the lines we have "sensations" as *Wasbestimmung*, i.e. functioning in determining in part at least, the "what" of the "content". In so far as the whole has the meaning that suddenly looms up, the meaning of a particular plan, or in Woodworth's example, the the one or other staircase meaning, we would have *Gedankliches*, *Gestaltsqualität* or *Regelbewusstsein*, or with Woodworth: percept-quality. In so far as it was an object, a thing, a unified something, it would have in it for Woodworth, thing-quality,<sup>104</sup> for Bühler, *Intention*, i. e. objective reference of some sort.<sup>18</sup>

### XXXI

It is this last "non-sensory" aspect of the experience of perceiving the plan, the staircase figure, or what not—that is of special interest to us. Here we are face to face with the problem of the thingliness of things of the philosophers,—the problem that Titchener would have us abstract from as non-psychological. Yet there are others who have the temerity to face it. The problem has been with us throughout the modern period of philosophy. In Locke it is brought in as the "idea of substance" which must be added to the sense impression to constitute the "thing". Yet how does he get it into his system, since as he says it is derived neither from sensation nor reflection?<sup>36</sup> And in

Hume,<sup>28</sup> again, we have a resolute denial of aught but "qualities", yet somewhere there is slipped in unawares a "gentle force" that binds them together. Coming nearer home, we note how not only Bühler<sup>19</sup> posits objective reference as a non-sensory component of consciousness, but likewise Woodworth,<sup>105</sup> attributing a non-sensory quality, "thing-quality", thinghood, or what not, to his perceptual experience, when he says: "The attempt to describe percept qualities as syntheses of sensory qualities is hypothetical in the second degree. The presence of the required images is hypothetical, and no less hypothetical is the power of the images, if present, by combining with the sensation to produce a percept. They might fuse, no doubt! But is the feeling-together of clanging noise and visual picture fully equivalent to the perception of a ringing car-bell? Were the two not felt as attributes of one thing, their mere simultaneous presence in consciousness would not give the percept which is actually experienced." The efficacy of the "gentle force" of Hume is doubted by Woodworth and is replaced by a special element of "thinghood" that must knit together the visual and auditory elements of the experience into a unified whole.

T. V. Moore<sup>41</sup> in his study on abstraction defines perception as "a process of assimilating the data of sense experience to their appropriate mental categories". It is these mental categories that are the counterpart of the non-sensory components of other writers. Among these categories we find that of "something". Theoretically this is believed by him to be the first category developing in the individual mind and it "enters, though not consciously and explicitly, into all his (the child's) later concepts".<sup>42</sup>

Turning to another contemporary writer, Schultze, we have a procedure similar to that of Woodworth. He posits a non-sensory component: the *Scheinsubstanz*, pseudo-substance, which gives to the experience the object meaning. His illustration is fascinating: "While enjoying the spectacle of the play of innumerable glow-worms in the north of Italy on a warm summer evening in the month of June, one often has the illusion of an unusually swift flying and fluttering on the part of the tiny



creatures. Now there is a glow here, now there . . . The illusion arises in that one notes the contemporaneous glowing of many worms at consecutive moments of time, but interprets it as the movement of one and the same creature . . . The illusion is conditioned—speaking psychologically—in that several light sensations are unjustifiedly correlated with one and the same pseudo-substance.”<sup>46</sup> Here we have a process of unification posited as a function of a non-sensory component as in the case of Woodworth’s example. But let us note: Schultze speaks in the following paragraph of this perceptual process as being explicable only by means of a conceptual process occurring without being noticed and immediately thereafter he says that “it is probable that thus also the processes of syntactic correlation will prove to be highly complex, but fully automatized, conceptual processes”.

In connection with these citations let us cite also a passage of Stumpf where he, too, appears to touch upon this problem. In a foot-note he defines his *Funktion* of awareness as that *Funktion* through which parts or relations are precipitated out of the chaos of phenomena.<sup>57</sup> Thereupon he says: “To be sure, there usually goes with it an instinctive positing of the part noted, and later there is often also a conceptual judgment concerning the presence of the part or of the relation.” It is hardly fair to seek to interpret a position on so slight indications as may be found in a foot-note. Yet even a foot-note must mean something and indicate some direction of thought. We ask: What may be the significance of this “instinctive positing”, *instinktives Setzen*, in this connection? Is it through this instinctive positing that the part-content, the phenomena noted, come to “stand over against us”? If so, then is there not, even in the phenomena something of the nature of an instinctive *Funktion* tucked away? And what is to be the meaning that we are to attach to the term instinctive? If instinctive, then it is essentially innate, but innate what? Is it an innate tendency to action?—We see that we are here coming into close quarters with certain “genetic” considerations that Stumpf so decidedly deprecates; yet by postulating this instinctive act, which later may be replaced or accompanied by a conceptual

judgment, he has certainly touched upon the problem of the relation of instinctive activity to conscious activity, and thus comes well within the domain of the biological aspects of consciousness.

We have then, here, five contemporary writers who touch upon the problem of objectivity, of the thingliness of things, Locke's problem of the idea of substance "which we neither have nor can have by sensation or reflection", yet concerning which he is constrained to note that we "accustom ourselves to suppose some *substratum* wherein they (the simple ideas of sense) do subsist, from which they do result, which therefore we call substance".<sup>39</sup> On the other hand we have Titchener who would deny that this is a problem for psychology at all.<sup>95</sup>

The function that is singled out by all these writers, however, is obvious enough. We awake from sleep in response to a sudden stimulus with a "what's that"! The psychological problem is: How is the "that" given us? Not in terms always of the "qualities" of the stimulus, for we may have in the situation a vivid "that-consciousness", these writers might say, long before the "whatness" of the "that" has been determined in the coming to consciousness of certain attributive aspects giving meaning to the stimulus. We "know" that "something was there", but it may take some time before the stimulation comes to consciousness in terms of certain sensory "attributes", or some other meaning. It is the "something" of Moore, the "pseudo-substance" of Schultze, the *Intention* of Bühler, the "thing" of Woodworth. All of these writers make the thatness a new structural category. But what would Stumpf do with our instance? Would the "instinctive positing" be precipitated into consciousness before the phenomena in terms of which the stimulus would be characterized, have themselves loomed up? And would this precipitating of an instinctive activity into consciousness then partake essentially of the nature of a "conceptual judgment concerning the presence" of some stimulus?<sup>57</sup> And would it be essentially in situations like that of our illustration that the instinctive positing, the thatness, would come to consciousness? Questions such as these bring us within close range of the functional doctrine of



perception. The "thatness is a function of the co-operation of many organic conditions. This functioning factor might be a typical attitude of the organism, as in the instinctive attention response. The consciousness that arises in this situation then is that of attentive straining after a "that".

Here lies the significance of such characterizations as that given by Colvin: "An object is, in the last analysis, constituted by a set of definite and consistent reactions."<sup>24</sup> "Thatness" in the case of the percept, would be referable to the influence of the "instinctive" innate reaction characteristic of responses to external stimulation. This factor in the total overt response becomes the basis for the attitude that contributes toward the awareness of the total situation as a reaction to an object present to sense.

While one can readily appreciate the dislike that certain psychologists express for the indiscriminate intermingling of conscious functions and motor functions, their legitimate desire to keep conceptual categories nicely apart should not lead them to overlook the fact that motor functions and conscious functions are closely interrelated. A stimulus that is making for expression in terms of one of several habits, insofar as it comes to consciousness at all, is experienced differently than when it calls out another habitual response. So, too, more narrowly, on the side of attitudes, the perceptual attitude may be felt as being distinctly different from the ideational. If then the thatness of the mental object be a function of the instinctive attitude with which the organism responds to the stimulation, it would appear that the standing over against us that, according to Stumpf, is manifested by the phenomena, is not a characteristic that is inherent in them, and that is, as it were, written across their face, but rather one that accrues to the sensory experience in the calling out of a certain attitude. The same would hold of the "imaginal" aspect of experience. Analytically sensations and images are not bare, simple, ultimate "thats" in their own right, but rather does their "thatness"—whatever may be the case with their "whatness"—arise as a result of the calling out of a definite type of functional response, originally instinctive, as Stumpf

supposes, but later singled out by consciousness and at times, under certain conditions, as in the experience of correcting illusions and hallucinations, playing a part in conscious activity and control.

The *Intention* of Bühler, the thing-quality of Woodworth, the pseudo-substance of Schultze, the "something" of Moore,—all these, then, may become distinguishable aspects of experience, accruing to experience through the functioning of certain definite attitudes. On the side of overt motor attitudes we have genetically the instinctive attention response, later develop the differentiated attitudes which might be referred to as the perceptual, the imaginal, the conceptual, yes, the interrogative even. The psychical "correlates" of these are the different feelings of "thatness", the "reality" of the object of perception, the "ideality" of the object "merely thought of." The peculiar form of objectivity, of thatness, which accrues to a "content", depends upon which one of these attitudes is functioning at the time. It may eventually be found that certain forms of mental malady are to be referred to the abnormal functioning of some of these attitudes; that *folie de doute*, for instance, is to be characterized as the tendency of a particular one of these attitudes to be set off under conditions in which in normal persons other responses are habitually called out; furthermore, that the degree of suggestibility may depend upon the facility with which one of these attitudes may be replaced by another.

Here we would appear to have the *Funktion* of Stumpf, the attitudes of Judd and Titchener functioning in such a way as to bring about a definite type of modification of consciousness,—these modifications being the different modes of thatness that arise in experience. We might be reminded in this connection of Stout's modes of being conscious of an object,<sup>47</sup> of Brentano,<sup>7</sup> and of Colvin's doctrine of attitudes as indicated in his book on *The Learning Process*.<sup>25</sup>

And now, what shall we do with these attitudes? Shall we follow Titchener and Colvin in their method of dealing with them, i.e., analyze them into "sensations", or shall we follow Stumpf in



denying that the *Funktion* can thus be stated adequately in terms of sensory ultimates. Or shall we go a little farther in another direction with Bühler, Ogden, Woodworth, Schultze, and others, and proceed to hypostatize the objectivity, thingliness, *Intention*, that accrue to experience as a result of the functioning of these various attitudes, and make of them structural elements?

Let us revert for a moment to Stumpf's position. While the *Funktion* was for him "immediately given" it was, nevertheless, not a content category like his phenomena. And its correlate, the *Gebilde*, likewise was not a new content. Now if the "conceptual judgment" concerning the "presence or existence of the part noted", of which Stumpf speaks, be the correlate of a *Funktion*, then it is not to be conceived of, in terms of Stumpf's system, as a new content but as a *Gebilde*. And furthermore, if we are justified in interpreting the instinctive positing of which Stumpf speaks, as the primitive unconscious *Funktion* that is genetically basic to the overt conscious judgment, then the "thatness" arising in unreflective experience, the unquestioning acceptance of the reality of the "presentation", insofar as it constitutes this presentation a "that" which stands over against us, also cannot be conceived of as a new "content". Thus the various modes of objectivity would not be, for Stumpf, new structural categories of static ultimates. If we have been at all successful in our identification of the *Funktion* of Stumpf with the "attitude" of certain American psychologists, then we believe, that at least in this he is to be identified more narrowly with the American functionalists in that he does not favor the hypostization of certain modifications accruing to consciousness as a result of the operation of the *Funktionen*. And, we believe that the various modes of objective reference will eventually be traced back to the functioning of certain typical attitudes or *Funktionen*. To hypostatize these "feelings" of thingliness, of objectivity, as independent structural "non-sensory elements", will result in the end in a psychology as disjointed as the structural sensationalism which those who proceed thus are seeking to overcome. To add another structural element to already existing structural elements does not overcome the difficulty.

## XXXII

It appears, then, that the "sensation" stands over against us, can be "inspected", because in a complex activity it has been placed over against us,—our attitude constitutes it an object. Yet here lies a subtle difficulty that arises in connection with Locke's problem. For the normal perceptual consciousness the "qualities" and the "objectivity" are given in a unity. There is no question of "is it or is it not an object?" in the thousand and one perceptual experiences of the day. It is only on rare occasions that the mind distinguishes twixt "qualities" and "thingliness." The various modes of objectivity, perceptual, imaginal, etc., need but seldom be abstracted and reflected upon, unless, for experimental purposes, or mayhap when we have become subjects in need of a psychotherapist. Yet, nevertheless, in the normal human individual they do eventually come to be distinguished, and the psychologist may ultimately discover the machinery of the overt judgment mentioned by Stumpf, getting his lead from such experiences as that in which we wittingly "try on" various attitudes in concrete situations where conditions are such as to favor ambiguity. Locke, however, did not follow this trail else he would have come upon the attitudes or *Funktionen* underlying the various forms of objectivity. He chose to follow another and thus came to postulate, as does Bühler after him, an "idea of substance" that is derived neither from sensation nor reflection. His method appears to have grown out of another mode of pre-scientific procedure which we have already had occasion to mention in another connection, viz., the method by which not the attitude is abstracted, but the type of objectivity that is experienced through the functioning of various attitudes. In other words he abstracted not the *Funktion*, but the "correlate" of it which in Bühler's scheme becomes pure thought: *Intention*. The method is that of the child that delights in staring fixedly at some word upon the page in order to get the strangely mystical experience of "losing" its meaning; then singling out a letter and losing its meaning, and after some time spent in losing meaning after



meaning, he finally emerges once more to take up his normal activities, yet feeling the awe of the little mystic who says:

"I know something more  
Than just a moment ago,  
I know something more—  
I wonder what I know?"

Our thought psychologist believes that he, too, "knows something more", viz: that "thatness", "objectivity", the feeling of "something", may continue to be "given" even after all the sensory "qualities" have been abstracted from the "object". These qualities, he finds, may change, yet the object may remain the same. Having abstracted from all the sensory qualities he finds that the "thatness" persists. He now attempts to account for this "thatness", and finds that since he believes that all that is "given" him is the qualities, he must assume a "substance" in which they inhere in order to constitute them a "thing". Hence Locke's "vague idea" of substance, gotten neither through sensation nor reflection, his only sources of knowledge. From the point of view gradually developing in contemporary psychology Locke is perhaps building better than he knows when he attributes this vague idea to "custom". We need not accept the implication that genetically there are first the "qualities" and then the gradual development of the "objects" through "custom"; but say, rather, that the thingliness is the function of the instinctive attitude that the biological form assumes with reference to the stimulus. Thus the "custom" in question becomes not an individual but a racial habit.\*

But having succeeded in abstracting the "qualities" from the "that", we must not commit the error that James repeatedly warns us against of assuming that the original unanalyzed experience is the sum of these two hypostatized abstractions: The one "sensory", the other "non-sensory" or pure thought. Bühler and the other thought psychologists who make the *Intention* a

\* Our Lockeian, however, might balk at this point, for fear lest he come dangerously near the bugaboo of "innate ideas."

static non-sensory element are using a method of procedure identical with that of Locke. With such a procedure the "qualities", the simple "ideas of sensation", acquire a thatness of their own as sensations, and this thatness is other than that of the unanalyzed experience of normal perception. The "qualities" are some of the meanings that may be successively shelled off from the *Ding-an-sich*. In making the sensations elements they retain this conceptual thatness of quality and only so can they be characterized as "standing over against us" with a thatness of their own, yet independent of the thatness of the substrate in which they are supposed to inhere.—We have here a suggestion toward a statement in psychological terms of the problem: How does the mind know its object; which psychological statement might possibly be found to point the way toward a workable metaphysical statement.

Bühler and others are quite consistent in carrying out the Lockean analysis to its logical conclusion. If our aim is to analyze the percept into its "elements", and we are satisfied to make of the qualities sensory elements, then it is only just to make the "vague idea of substance" another element. Yet in proceeding thus the "sensationalist" and those who find the "imageless thought" are alike following the method that, whether it be admitted or not, grows out of a conception of consciousness as an entity of which the "sensations" constitute a part. Having conceptually created the sensation entities, we question the "power" of the "sensations" to fuse and to constitute an object.<sup>105</sup> But to proceed forthwith to create another sort of entity that is to fuse them, as Woodworth does, for instance, leaves us still with a disjointed experience. The difficulty is that the "mere sensation" is for them an entity already, but not the same entity as the colored sounding hard object that compels our attention. But to create another non-sensory "thatness" gives us not the fused, unified, mental experience of normal perception, but the state of mind of the philosopher, facing the problem of the relation of the "qualities" to the *Ding-an-sich*.

It would appear, therefore, that Bühler's *Intention* is, as he



claims, truly a distinguishable characteristic of every actual conscious experience. We saw that the type of *Intention*, of thatness, may be very various indeed. But if it should be found that the whole of conscious life always divulges this "ever-present" aspect of objective reference, for which Brentano<sup>8</sup> contended nearly forty years ago, then Bühler is doing contemporary psychology good service in insisting that investigation be directed upon it. Granting this universality for the nonce, with what current concepts of psychology will it be found to have elements in common? Are we lead to correlate the "thatnesses" with the focus or foci of consciousness? Does the focusing constitute objectivity? Are the various "thatnesses" felt as different by reason of the functioning of different attitudes within the total activity? In how far are these different "feels" of thatness, which we are now discovering, comparable with the "modes of being conscious of an object" of Stout?

Chiefest of all the service that has been rendered us by the "thought psychologists", among whom Bühler, beyond a doubt, has been the most active and heroic, is this: It forces us to face the question as to what constitutes our concept of sensation and its relation to the other psychological categories. Not the question of the presence of "non-sensory elements" is first to be decided, but rather must the psychologist first consider the question of the meaning of "sensory" and of "element".

### XXXIII

If the "thatness" of the sensation accrues to it by reason of the functioning of a specific attitude, *Funktion*, or *Bewusstseinslage*, then it must be stated not as a peculiarly inherent characteristic but as one that is derived. And what about the other "attributes", —are they inseparable, ever-present aspects of an ultimate, "given" sensation element?

We have cited those who would demur at the rigidity of the interpretation of the concept that, as was pointed out, continues

to bear the marks of its origin in connection with a conception of the nature of mind that makes sensation a relatively static, "meaningless" factor in experience. We have cited Külpe as proclaiming the possibility of abstract *Vorstellungen* in "actual consciousness", and relegating the sensation of the inseparable attributes to a nether-world of "psychic reality". A suspicion is arising whether sensation is to be adequately stated in terms of the old definition. May it not be that the sensory attributes may themselves be found to be not ultimate, but developments in a complex process? Like all individual meanings the sensory *qualés* as experienced are developments in an organic system of meanings, a growth within the individual's experience.

Külpe points out that the form or pattern of the sensory stimulation may be reacted to by consciousness to the exclusion of other sensory attributes. Angell points out that on the side of the development of the individual mind grossly different forms are reacted some time before qualitative discriminations are made. This would be the genetic statement of that which Külpe notes. If we consider the conscious experiences involved in these reactions noted by Külpe and Angell as sensory, then the sensationist must admit that it here possesses a character very different from that of those other experiences into which the qualitative distinctions have entered in.

So far as consciousness is concerned, the attributes come into being within the actual experience of the individual only at the moment that a discriminative reaction occurs.

Human faces, for most of us, are perhaps among the most interesting of objects. The mobility of the nostrils, the fine lines about the eyes, the sensitiveness of the mouth, the depth of the eyes,—all these are the basis of the subtle differences in our reactions with reference to our fellows. And all this is mediated by visual stimulation. We may have thought that we were fairly familiar with these impressions. Yet on a day we wander into a portrait gallery, perhaps it is our first time there, and as we look at the pictures a sense of strangeness comes over us. These are not like the faces of real life—never were there such



deep shadows on any human face. We go out upon the street and peer into the faces of the men and women that pass us—yes, the painter was right. And henceforth the faces about us come to have for us an added richness of meaning. Now if color tint be accredited a sensation attribute, then the doctrine of the sensation element that comes into being always and only with all its attributes must make its peace with the facts. Schultze points out that the artist sees various tints and hues where the layman sees naught but white snow.<sup>45</sup> In Pillsbury's words the layman might be said to experience the "type".<sup>44</sup> Again, in glancing at a brass vase one does not always perceive the distribution of light and shade, but as in the case of the human face percept, mentioned above, the color of the surface is often perceived as "all of a piece".

Another case in point: The teacher of introductory psychology has every opportunity to study the process by which the attribute of "saturation" comes home to the consciousness of his students. He will get from them the surprised remark that this has changed their whole consciousness of color. Others have vaguely "felt" it, but it had not been quite able to come clearly to consciousness. Others never can "see" it. Surely Külpe's distinction between conscious actuality and psychic reality is a most useful one at this point for taking cognizance of the facts of difference that we note here. If the "real sensations" are the same throughout, well and good—let those who need it take comfort in the thought—but the actual consciousness, the consciousness of our world of thinking<sup>43</sup> and aiming and striving, is very different not only on the side of mere character but also on the side of control, after the discrimination has been made. The newly discovered attribute is definitely a function of the complex attitude into which we sought to bring our student by means of our similes and suggestions in figurative speech. And having succeeded in bringing the meaning home to him means just this: the enrichment of his experience by this new mode of conscious reaction upon visual stimuli; and the method by which it is acquired is essentially the same as that by which we are led to acquire any other new con-

scious reaction—as when one attempts to put another into that attitude which will make possible for him the noting of the hidden figures in the ambiguous drawing.

Now, either this attribute of saturation was always a part of the student's actual conscious experience and that of color tint always involved in the perception of human faces—in which case it must be shown how these attributes were involved, whether marginally or "sub-consciously" or as neural activity merely; or else they come into existence as *conscious experience* in that first discriminative reaction with reference to them.

If we take this latter point of view, the "sensation" as a fact of consciousness must be stated as a development within the individual's experience which is enriched only gradually by distinctions of sensory attributes. Genetic considerations lead us to note the necessity of discarding the definition of sensation as a sum of fixed inseparable "attributes", a definition that has been taken over unquestioned from certain philosophical systems. Sensory consciousness is no simpler than, but equally as complex as, any other type of consciousness and the laws of its coming and going are the same as those for the rise of any other form.

If we take even the simplest of our sensory experiences, we shall find always that it can be adequately stated not in terms of a bare "what", but that it involves a complex reactive process to make it what it "is". Schultze tells us that the "whiteness" of the perception of the snow may be not sensory but "conceptual".<sup>45</sup> The "thatness" of the quality also is, as we have seen, not as Stumpf and Stout<sup>48</sup> would have it, a matter of inherent objectivity, but as our analysis leads us to believe, likewise a function of the total situation in terms of which the sensory experience, as Angell puts it, can alone be described. We have noted that the process by which an "attribute" of visual experience comes to consciousness for the first time, is a complex process, and our account is very like that which Moore gives of the hypothetical rise of one of his non-sensory categories.<sup>42a</sup> Our similes, our circumscriptions, our figurative speech, were essential factors in creating a situation for our student that made possible for him



the experience of the saturation aspect. To use the terms of Moore, what we really created was an imageless category to which the data of sense experience are assimilated.<sup>41</sup> For it is these new attitudes that constitutes essentially one of the non-sensory elements of the thought psychologists. When therefore the thought psychologist postulates a "new element" he is attempting to overcome an inherent difficulty that he is coming to feel with reference to stating consciousness in structural terms. But the difficulty does not lie as he supposes in the insufficiency of the traditional number of "ultimate" structural elements with which he has hitherto operated, but rather in the fact that he is trying to operate with "ultimate" structural elements at all.

#### XXXIV

If the sensations be not simple structural "ultimates" of consciousness, we return to our question: How did the conception have its rise?—For the early philosophers of the modern period the problem of knowledge was dominant. How does the mind know the world? The mental objects were given in terms of sensory qualities; they were "impressions" of the real object upon the *tabula rasa* of the mind. Permutation and combination of the "simple ideas" gained in sense impression, give rise to all other "ideas of sensation." Then there are certain phases within the process of permutation and combination which may momentarily become "objects" in themselves and we have as a result those other "ideas of reflection", ideas of conscious activities. But always the "ideas of sensation" are fundamental.

Thus sensation was an ultimate genetic category. Through this gateway all knowledge comes to us, and thus the philosopher was able to lay low the hobgoblin of "innate ideas". To be able to proclaim that there are no "innate ideas", but that all knowledge rests upon sensation, gave tremendous satisfaction to the empiricists. Soon the genetic category, however, developed into a content category. For Hume "qualities" are the only elements of

cognitive consciousness. The subsequent gradual development of this conception of sensation as a structural category is an important item in the history of empirical psychology.

Under the influence of physiological considerations the "impressions" of Locke and Hume cease to partake of the nature of "copy" of external objects and become essentially the conscious correlate of the physical stimulation of end organs, or of the revival of cerebral activity underlying past sensory experience. Yet the influence of the "impression" theory still continues to be felt in that the "sensation" and "image" is a real "item" of the experience toward which the sensory stimulation contributes. But another determining factor is that of Kantian philosophy. In so far as we have in our contemporary definition of sensation the item of "meaninglessness",<sup>42 80</sup> we note the influence of idealistic philosophy with its distinction twixt sense and understanding.\*

Arriving at the conception of Wundt and Titchener we find that the sensation and image element is not the total mass of sensory impression, or its revived image, as represented by the "ideas" of Locke. These latter are conceived as "compounds" of "complexes" that are to be analysed into "elements". These elements then come to be minutely studied in isolation and thus we have attained to that massive body of knowledge on the psychology of the senses. We may say that the sensationalists have been fairly consistent in their structuralistic procedure. Actuated as they are by the motive to trace consciousness back to its source in sense, they attempt to *analyze* all cognitive consciousness into component "sensations" and "images." Whatever we may say concerning the nature of these as "ultimates", the structural analysis may be regarded as legitimate only in so far as we always bear in mind that when we say that an experience is analysable into these and these "sensations", we can thereby mean only that the sensory stimulation now mediating these "sensations," and the cortical excitations underlying the "images" now in consciousness under conditions of introspective analysis,—that this sensory stimulation and these cortical excitations were functioning as a

\* See above, Section XXIII.



unity in the experience that was held up for analysis, in such a way as to contribute toward that peculiar experience of the conscious attitude of doubt, or the unified percept, in the actual consciousness of just a moment ago. In so far as this position is taken, the analytic psychologist, until he finds good grounds for abandoning this method, is justified in "dissecting" actual consciousness into "sensations." And all the while he can do justice to the fact that actual consciousness appears often to have but little in common with the sensation of the inseparable attributes. But the moment he maintains that the attitude or percept is in any way the sum of these sensations of the inseparable attributes as actual conscious "processes," one must enter demurer. For it would pledge us to the doctrine of static conscious elements,—static, no matter how much we may protest that they are "processes". Actual consciousness cannot be thus conceived.

Hume, however, was the point of departure not only for empirical sensationalism, but also, through Kant, whom he had awakened from "dogmatic slumber," for quite another movement in philosophy, that in its turn has influenced psychology. The "sense impressions" of Hume became the phenomena of Kant. Over against these was the Reason that manipulated the phenomena. The "real objects" of Locke became for Kant the noumena, that underlie the phenomena. Kant, to be sure, despaired of the possibility of an empirical psychology, but his influence is clearly manifest in the psychological trend that we are considering here. It is the activity character of consciousness that occupies attention to-day. That this very aspect that Kant despaired of seeing attacked by empirical methods, is also the very one that the thought psychologists are grappling with, is evidenced by Bühler's remark after the following citation from Kant: "This schematizing on the part of our intellect is an art hidden in the depths of the human soul; and it is hardly probable that we shall ever discover and lay bare this knack of nature." Hereupon Bühler says: "It is evident that Kant has allowed empirical considerations to enter in, and if we continue them systematically, then we need not despair of our problem; it may

prove difficult, but we certainly shall discover and lay bare these 'knacks' (of nature)."<sup>16</sup> For Kant, we saw, there were two fundamental categories: sense and understanding. Through sense the phenomena are given: through the understanding, the meanings. How these came into being and how they functioned, Kant despaired of ever discovering. Yet after him, we note his influence in certain developments in contemporary psychology. The *Funktionen* of Stumpf, the "acts" of Brentano, and the conceptual categories and meanings that arise as a result of the operations of these, still bear the marks of their derivation, historically, from Kant's system.

In so far as the thought psychologist adheres to the Kantian ordering of the categories, we run little danger of developing a new structural "thought element." "Thought," for Kant, is an activity, not a static given like the phenomena. In Stumpf, for the most part, there is logical consistency in this respect. But the psychologist with this philosophical bias has been trained in the analytic structural psychology of the sensationalists. Now the phenomenal mind of the sensationalist, no matter how much he may protest to the contrary, is a somewhat that is to be dissected into its elements. He has learned to note some of these elements and has discovered much about their characteristics, and it is in terms of these characteristics that he has defined them. Thus the realm of phenomena has been minutely explored and the results of the exploration taken up into the definition of the elements. Yet all the while, the mind of the thought psychologist is occupied with his heart's desire, to understand the *working* of the actual mind. But Kant himself had despaired of ever knowing that, except by its results, and so one continues to labor in the vineyard of the sensationalist. Analyse, analyse, analyse; state this, that, and the other formation, as colligation, as fusion, or as assimilation, if you will; but above all things, analyse them. So, like little Johannes of the Quest, they kept at it. But, as with Johannes, a suspicion arises in them that what they are finding under these conditions will not lead them to their heart's desire: the understanding of the working of actual consciousness.



They occasionally make faint attempts at piecing together the phenomenal elements, to compare them with the original experience,—but that is a violation of the prescribed method.

Yet finally they take courage, and rise in open revolt. The spell is broken, and they secede. They call the domain of the master in whose vineyard they toiled in weary captivity, the realm of Psychic Reality. Their own territory they call Conscious Actuality. And now they set to work. But what will they do for a method?

Trained so long in the school of the sensationalist, it is small wonder that they take over much the same system of habits, and much of the conceptual machinery developed there. The sensationalist takes his "given" experience, the percept or the attitude, and holds it up; he now has a new mental state in which he finds sensations of special sense, kinaesthesia, etc. He may conclude that the sensory stimulations and cortical excitations that now mediate these sensations and images, when functioning in the original state were to be correlated *in part* with the consciousness of percept or attitude. The tendency, we saw, is often to go a step farther, however, and to commit the fallacy of saying that not only this sensory stimulation and cortical excitation, but rather also the elements of the inseparable attributes presumably now mediated by this neural activity, were also present. We forget that the "sensation" and "image" are partly a function of the neural activity of a different cortical system than was involved in the percept that was called out a moment ago in response to the same physical stimulation, which percept we held up and "analysed."

Now some of the thought psychologists are just as prone to fall into this error as is the sensationalist. Following accepted methods they take, say, a perceptual experience, and ostensibly try to discover any sensations or images that answer the structural sensationalist's definition of the "sensation element." Thus they continue to regard actual consciousness as being capable of a static, structuralistic analysis. And now they do what they did not dare do under the old régime: They take, or try to take, the

"sensations" and "images" that were analysed out and compare them with the feel of the original experience or one that they believe to be like it. The result is that they discover that over and above the "sensations" and "images" there is "something more", and that is the "non-sensory" element. The method by which this is obtained is interesting: Take three persons, segregate them, stimulate each with a tonal stimulus. As a result you must say that there were three sensations experienced. But put the three sensations into the same consciousness and you have not only these three sensations but something over and above them: you have a clang or a chord. Again, take three lines, you can experience them separately in certain definite positions and you have simply "lines"; but experience them together, in the same positions as before, and you have not only the three lines but over and above these: the "triangle." The form-quality is the "non-sensory" component. Or again: given a melody in a certain key; then the same melody in another key. There is a common "element." So far as "sensations" are concerned the two experiences are wholly unlike. But they have something in common: the "form." This, then, must be something over and above the sensations.

Where the sensationalist, having analysed, ostensibly stopped short, the thought psychologist does not stop, but approaches his "original experience" of "actual consciousness" and compares the products of his analysis with the original. He notes a difference. This difference is postulated as "thought element."

Had the first philosopher of this attitude of mind—shall we call him Plato?—stopped short where the sensationalist stops, and then had no one after him dared to depart from his example, we should to-day have no "thought element" to combat. But it so happens that this first one did do the wicked deed, and since then there are those who follow his example and attempt to tally their analysis by some form of synthesis or reconstruction, and always there is "something more." As to method, the sensationalist analyses and seeks to explain in terms of "body-processes"; the other analyses and then attempts some form of



reconstruction. And as a result of his attempt at reconstruction he discovers that somehow, in the first analysis he overlooked an "element". But having found it, he henceforth knows enough to look for it at once and sure enough, it is always there.

Thus far this factor of form, pattern, plan, meaning, has been considered only as it is supposed to appear as a "funded content" in connection with other, sensory, elements. But one day our thought psychologist comes along and finds that the sensations of the inseparable attributes are not always discoverable, yet the lamp of thought burns bright as ever. Sensations and images sometimes occur, but they are as "sparks struck off from thought in its progress rather than thought itself"<sup>100</sup> and they "hinder rather than further thought." All that there is in consciousness is "thought," which is quite unlike the meaningless sensation or image of the inseparable attributes as defined by psychology as a science. Actual consciousness, he concludes, may therefore operate without "sensory" material. No longer is there need of stopping to analyse in order to find the sensations and images; when they do appear they are known for what they are, and then, for the most part, they are a nuisance.

Thus our thought psychologist, when he turns from consciousness as sensation-mongering and image-mongering, to consciousness as problem-solving, decides that consciousness is not made of "image-stuff" but is essentially of the nature of "thought-stuff."

This then, is the account of the rise of the "sensation element" and of the "thought element." Both of them are due to a conception of consciousness as a somewhat that is capable of static analysis, a somewhat that is constituted of part contents which are to be described "as they are, existentially." That the sensationist, however, discovers but one class of cognitive elements whilst the thought psychologist discovers two, is due, as we have seen, to a difference in their methods of procedure.

## XXXV

Our thought psychologist concludes that there are two modes of representation: one imaginal; the other *reingedanklich*, pure thought. Bühler tells us that he can think a specific blue object in two definite ways, first in terms of a visual image of the blue, and then in terms of a purely *unanschaulicher Gedanke*, and that the second is just as definite as the first.<sup>13</sup>—Now if an observer should be found who only rarely has visual imagery and whose auditory imagery is dependent in large measure upon the motor factor involving the vocal organs as a provocative,—the visual image being a rarely occurring phenomenon and evincing a profound emotional response owing to its great unusualness and the auditory imagery being bound up with the motor factor so that it is seldom a free rising image, (and yet with all this the person takes a keen delight in music and art presentations, but nevertheless finds it well-nigh impossible to recall in terms of auditory or visual representation)—if such an observer should be found, we would verily have a case of one who must and does refer to the objects of his world in the manner that Bühler subsumes under the head of imageless thought. But if such a one should maintain that his whole conscious life is shot through with kinaesthetic experience—that every attempt to introspect precipitates such experience—that the meaning as kinaesthetic imagery often comes just as near to the surface of the stream of thought as the meaning of auditory in an auditory idea,—then for such a one it could not be maintained that his thought was any more non-sensory or imageless than is the auditory idea. It is no more “mere” kinaesthesia than is the auditory idea merely auditory imagery, for the moment it becomes kinaesthesia the “thought” is gone.

Our observer, we maintained, is almost wholly lacking in visual ideas, and auditory ideas are supported as it were by the motor factor of the vocal organs. But over and above this type of experience involving auditory factors, our observer maintains that there are others of another type, viz., just such cases as that of Bühler’s example of imageless thought that was quite without “sensory” factors. There are certain definite



spheres of thought, certain "areas" of experience that involve this type of activity. Indeed, our observer maintains that this mode of thinking is in certain situations of his daily life a most common occurrence during long stretches of time. In sooth, he would be characterized by the thought psychologist as an extreme example of "imageless" thinker. . . In human intercourse persons of this type experience much of what Lipps and his school appear to subsume under the term of *Einfühling*. Their attention does not appear to apprehend primarily the visual presentation of another person before them, but rather his "very soul". They come away with little knowledge of the person's outer appearance, but with a lively appreciation of his "inner life". The writer has taken some pains in questioning this type and he finds that many are surprised that not every one "knows" others in the same manner as they do. The other person is experienced "from the inside", as it were. There is a precipitant grasping of another's meaning and a reaction to it before the other has uttered a word. Such anticipation may at times approach close to the uncanny. To some, this revelation of the other's personality precipitates often a moral problem: is it right to look so deeply into the living reality of another's being, for the very fibre of the other's moral personality seems to be felt. The tendency "to put one's self in the other's place" is singularly marked in these persons.

Now such a person, though he can summon no visual image of some particular blue under normal conditions, can still adequately refer to it in his thinking. He can bear witness to the absence from the experience of all "irrelevant images" with their inseparable attributes, and to the presence of all that Bühler claims for his "non-sensory" thought. There is definitely "whatness" and "thatness",—*Wasbestimmtheit*, and *Intention*. Indeed the thatness aspect, the *Intention*, is often a most prominent aspect of the experience.

In the case of such experiences like that of Bühler's example, the attempt to introspect reveals definitely a fleeting consciousness of motor attitudes that, he believes, as attitudes functioned in

the thought by contributing especially towards the reference aspect, the *Intention*. Whenever such attempts are made to hold up a memory experience in which the awareness of another's personality is central, the liveliest of kinaesthetic imagery is precipitated. There is remarked an absence of imagery of the special senses, but there is vivid imagery of posture, of holding the head, of finer "feels" of characteristic movements of muscles of the face, especially of the lips and eyelids.

When, in Külpe's experiments, in the case of abstraction of pattern or form from the visual presentation in actual consciousness, the person is said to *see* actually only the form, and that quality is abstracted from, we have a case that may be placed alongside of the getting of the "meaning" of another's "personality" as a part of the immediate percept—as it were. Our observer, too, often can tell you nothing concerning the visual appearance of the person, there is often no immediate memory of the color of clothes, hair and eyes—in short no visual "image" to give these details. And yet our observer has the knack of pointing out aspects of character in another person that others have discovered only after long acquaintanceship. Our observer when attempting to hold up such an experience notes *kinaesthetic imagery* (which is not to be confused with visual images of movement or kinaesthetic sensations), and definitely emotional factors.

On the side of mechanism, such a person cannot be "set" for the sensory aspect of visual experience at all, but the path of discharge appears to be mainly in a direct route away from the visual cortex to the kinaesthetic and motor areas; this would appear to be the case especially when at some moments of experience our observer almost "forgets" that he is not the other, but experiences with him, and is often actually "embarrassed" with the other, in a situation. It is small wonder that this mode of consciousness should appear to be more nearly allied to the nature of "thought stuff" and seemingly more intimately "psychical" than imagery of special sense. It appears to be peculiarly of the essence of "meaning". And when Woodworth<sup>105</sup> main-



tains that the sensations are not the "meaning", that they rather "call out" the meaning, our observer believes that he knows what Woodworth is getting at. The visual image, in the case of individuals in whom it is common, may be as "irrelevant" to the meaning as is the visual "sensation" in the case of the perception of another's "inner life" on the part of our observer. The "sensations" for Woodworth, call out the "meaning". Now it appears that in so far as consciousness is concerned, the visual characteristics of the person are not noted by our observer at all; all that is "there" in consciousness is the "meaning". For our observer on the side of *recall*, however, the visual factor drops out almost completely excepting in so far as the "feel" of its having been originally a visual experience may be present as an "attitude" (which is not a subtle, vague thing for the person of this type, but often a very actual conscious experience, of the kinaesthetic type). Woodworth's observer would not appear to be of the extreme type that gets the "meaning" alone when *perceiving* a person, and in whose consciousness the visual aspect is abstracted from often almost completely. And on the side of recall, also, it may be found that variations occur. Woodworth's observer, when he "thinks" of the person, might get the visual aspect along with the meaning; our observer maintains that the visual image does not enter in. There may be also another difference on the side of recall. The whole organization of the extreme kinaesthetic type appears to be that to "call up" an experience, a thought complex, the initial process is always a certain "attitude" that then "brings up" the "thought"; it may well be that for Woodworth's observer the recall is *via* the *image* of special sense which is necessary to call up the "meaning."

Bühler appears to regard all thought which he does not believe to be re-presentative but representative, as "imageless," and all "imagery" that he does not believe to be re-presentative as "irrelevant."<sup>27</sup> Yet it may well be that the kinaesthetic type of activity is just as re-presentative for some persons as the visual is for others. And when Bühler does note just such phases of experience that the introspective purpose occasionally loses from

the relations in which it is occurring, he shows the operation of the fallacy that we pointed out in our discussion of method. He says: "And if, in the case of such experiences which might be expressed by such words as 'but' or 'or' or 'nevertheless', there is a feeling as if I were going from something at my right to something at my left, or from something in front of me to something back of me—one surely would not wish in all seriousness to generalize upon this fact of experience in the form of a conclusion that the real conscious correlate of these ideational continuities is to be sought in these sensory elements."<sup>10</sup> Bühler here proceeds as do all those who conceive consciousness as a "substance" to be statically analysed. He assumes that sensations are "real items" of experience, entities, that may float upon the surface of consciousness, but do not constitute its essence. Its essence is another entity: *Gedanken*.

Let us bear in mind the point that we arrived at as a result of our inquiry: that the mistake of both the analytic sensationist and that of the analytic thought psychologist is often that they forget that the conscious moment is as much a function of the "modified cortex" as of the specific character of the inducing stimulus. If, however, a conscious experience is to be characterized as "sensory" on the score that when the shift to the introspective purpose takes place, we find certain "sensations" and "images" present, and if we proceed on the hypothesis that we may infer that a part of the nervous mechanism that is supposed to be involved in this activity of analytic experience was functioning also in the interrupted experience—if such an experience of "actual" normally functioning consciousness is to be characterized as "sensory",—on this score, then, those very aspects of experience that the thought psychologist characterizes as essentially "non-sensory", must be put in the same category as the seemingly more patently sensory re-presentative experiences harking back to the functioning of the organs of special sense.



## XXXVI

When Titchener characterizes the thought psychology as being guilty of reflection,<sup>93</sup> it might legitimately retort that it is no more and no less reflective than structural sensationalism.

The various forms of mental activity, imagination, perception, judgment, etc., as mental activities are supposed to have a different "feel", yet the unreflective person may never have become aware of these subtle differences; and only upon reflection does he become conscious that there is such a difference between the "feel" of the percept, and that of the thought, whether imaginal or "pure", still referring to the same object the moment he turns his back upon it. It is only when he begins to question the status of the two "objects" that the attitudes come to consciousness in some way. Do the "feels" of these attitudes have any sort of existence before we begin to reflect or question with regard to them? Would we have to assign to them "psychic reality" until reflection sets in and brings them into conscious actuality?

This much appears to be true: Reflection, not necessarily psychological reflection, does bring to pass the awareness of differences in the "feels" of the attitudes. It is only at those stages in individual development at which changes or conflicts in attitudes occur that we become aware of them,—that we become conscious of the difference of the "feel" of the attitudes, and this precipitation into consciousness upon further reflection may again be operative in bringing about changes in the "feel" of other attitudes.

But this process of increasing the richness of the feels of attitudes need not have its source in scientific psychological reflection, for there are precipitations of attitudes into consciousness prior to the stage of reflection. In the actual normal development of the individual sudden changes and conflicts in emotional and purposive attitudes occur, which force the distinction between them home upon him. Paul on the road to Damascus "saw a great light." This made a different man of him on the side of overt behavior; but chiefest of all let us note that it is at the

point of such sudden changes that the attitudes are themselves precipitated into consciousness, and whatever may have been their status before, they now have a conscious meaning or "feel." In this sense Paul's inner experience is just this much richer than that of the "born" saint, whose mature attitude is the product of a gradual development. This then as an example of a conflict or sudden change in attitudes precipitating both into consciousness. The earlier attitudes may have served a function within the life activity of the organism, but they were not experienced as *conscious attitudes*. So much for attitudes coming to consciousness as a result of motor conflict. Generalized: attitudes, whether instinctive or habitual, are precipitated into consciousness at the point of sudden change or of conflict between them.

Next we note that once the individual has attained to the level of reflection, it is through this reflective activity that changes are introduced into other instinctive and habitual attitudes. Inject reflective consciousness into instinctive and habitual modes of response and the activity that was unconscious, now becomes conscious and this coming to consciousness of the attitudes tends to change them, not merely by making them conscious, but in that the precipitation into consciousness tends to result in some readjustment within the co-ordinations constituting the habit or activity on the motor side. Reflection in a given case may make possible, say, the coming to consciousness of certain stimulations from the moving muscles of the legs in walking. The result is that an observer notes that we possess a "conscious walk." The *act* as overt motor occurrence is thereby changed. Among the attention attitudes, which on the physical side are perhaps the only types of acts that ought to be referred to as attitudes, we find that the development on the unreflective level has advanced far before elaborate reflection may enter in. We find various of these attitudes prevalent in subhuman reactions. "Doubt" and "belief", on our tentative hypothesis, would be originally matters of overt attitude. It is only when conflicts occur, that the attitudes gradually become *conscious attitudes*, and it is in the refinement and differentiation that results from their becoming



conscious, that we must seek the beginnings of the elaborate differentiated attitudes that are involved in the complex activities of the higher intellectual functions.

Genetically our hypothesis would see in the most elaborate scientific attitude,—the holding of judgment in abeyance, the functioning of control factors, of regulative maxims—in all these we would see a gradual development that is a result of differentiation and re-coördination of primitive instinctive attitudes that develop at first primarily in the immediate response to peripheral stimulation, but soon differentiate also along lines of ideational activity. Children's "lies" (note quotation-marks), to cite the most notorious example, are referable, on this hypothesis, to the assumed fact that differentiation between the perceptual and the ideational attitude-complexes, has not gone on apace. Now reflection hastens the process of differentiation and reorganization at the point where, through it, the instinctive or habitual attitudes are precipitated into consciousness. The thought-psychologist necessarily becomes aware of subtle distinctions in attitudes of which he never before had become conscious. Such a precipitation becomes, willy-nilly we believe, the beginning of a reorganization just as truly as the injection of consciousness introduces change into the walking.

Generalizing tentatively once more: not only does consciousness arise at the point of change or conflict in habitual attitudes, thus resulting in the precipitation of "feels" of the attitudes; but furthermore the injection of consciousness into an ongoing habitual activity through "reflection", tends to change the activity. The "acts" of the Brentano school, the *Funktionen* of Stumpf, the "attitudes" of Judd and Titchener, the *Bewusstseinslagen* of Mayer and Orth (*Bewusstseinslagen* are well defined by Bühler as a "consciousness of the thought process and especially of the turning-points in this process, in the conscious experience itself")<sup>9</sup>—all these might thus be said to have become definitized in the actual experience of the psychologist in the course of his reflections on the nature of thought and mental activity. Yet the beginnings of this conscious definition, leading

eventually to an hypostatization, would lie genetically in the originally instinctive attitudes as types of motor reactions within certain environmental situations. So much for the genesis and the nature of conscious attitudes. Functionally and as "felt", their character is a product of the process of organizing going on in the psycho-physical organism. Both on the side of function and of conscious "feel" they develop partly under conditions of conflict and change; partly their elaboration is due to their being caught up in the organizing activity of consciousness. . . . In other words the instinctive motor attitudes are precipitated into consciousness at the point of conflict, and on the other hand the being drawn into the organizing matrix of reflection tends to change them.

If then, the "attitude" as a conscious "feel" of activity is thus a development and not an "ultimate", what about the "sensation"? We would submit that just as an attitude becomes a conscious attitude, a feeling of activity, a conscious *Funktion*, a *Bewusstseinslage*, under conditions when there occurs a conflict or sudden change on the side of unconscious motor attitudes, and just as reflection may precipitate attitudes or habits of reacting into consciousness and thus enrich consciousness by specific "feels" of activity, of *Funktion*, or what not, so too, the enrichment of the meaning of experience as sensory may occur through the simultaneous or successive operation of stimuli calling out different conscious reactions.

If we were to construct a hypothetical world in which no light waves other than red were to act upon the retina, and if we were to be reared from childhood in this hypothetical world, we may ask ourselves what sort of a visual consciousness would the child have, and what would be his experience when suddenly a yellow is introduced into his world? What will our answer be? For our answer will reveal our notion of consciousness, of mind, or what not. We believe that a getting together on such highly hypothetical question as this, would do much toward lifting the cloud of misunderstanding now patently existing amongst the various "schools." In what sense is the redness the same before and after



the introduction of the yellow light? Was there any conscious redness at all before the noting of the difference between the two lights? Did it exist in Külpe's psychic reality before the precipitation into conscious actuality? Or will we say simply that the redness and the yellowness came into conscious existence at the same time?

We would here revert to our analysis of the behavior of meanings. If this analysis was essentially sound, we conclude that in so far as it is dependent on objective stimulation, consciousness is aroused only at the point of differences, of change in that stimulation; if the objective stimulation remains constant, consciousness tends to subside. In so far as consciousness still continues to respond to the uniform stimulus, this is conditioned by a shift in the meanings evoked by the stimulus. As Angell has pointed out we must note always new aspects, new sides, new attributes of the object if we would keep it in consciousness.<sup>2</sup> If this statement has any justification, then, applied to our hypothetical child, the redness would be born into consciousness only at the point of the introduction of the differing stimulation. Generalized once more: the unfolding of experience as sensory would be a gradual development; each and every new discrimination thus induced by the introduction of new forms of stimulation, would tend to change the actual conscious experience of all the related "elements."

Such a statement, if we may entertain it at all, even hypothetically, would be supplemented by another, which we have touched upon also in our earlier attempt at analysis. Not only does consciousness appear to arise at the point of change in objective stimulation and tend to subside when habituation has set in; but conversely; when reflective consciousness is injected into the sensory phase of experience, it tends to introduce changes therein. If we revert to our case of putting our student into an "attitude" that would enable him to discriminate the aspect of saturation, we have a case where reflective consciousness functions in bringing out the new aspect. The "attribute" becomes a function of the "attitude" which we create in the student by the use of similes

and what not. In other words, the process of differentiation, begun at the point of change introduced into the objective stimulation, is continued with the rise of reflection, and thus the constitution of sensory experience as conscious becomes just as much a function of "reflection", as are the attitudes. And a psychologist, interested in the activity phase of consciousness, might just as legitimately make the attitude the ultimate of experience instead of the sensation. Our analysis, however, tentative as it is, would lead us nevertheless to conclude that a more adequate grasp of the nature of human experience will be gained by a realization that neither the one nor the other is "ultimate."

### XXXVII

With this, we would close our attempt at analysis of certain problems in contemporary psychology. . . . We have meandered along a devious path. . . . We have discovered bit by bit that it is verily true, as Titchener points out anew<sup>31</sup> that all consciousness is in continual flux. We have seen that observation of consciousness, from the point of view of a psychological purpose, inevitably introduces changes into the ongoing process. We saw also that the very changes that a psychological purpose introduces into the process, are of vital interest to the psychologist, for it is at this point that psychology may give to the life of to-day a contribution in the way of control analogous on the side of "inner" experience to the control given by the physical sciences on the side of "outer" experience. . . . The problem of the "actings" of the mind has come home to us anew, and calls for investigation. Even though the psychologist should find that they are but "another way of looking at" what is "existentially" "one and the same process", this "other way" of looking at it may bring to light new facts about the "process". Is this awareness of the "actings" contemporaneous with the awareness of the "objects"? Is it peculiarly marginal as compared with the percept, and must we therefore distinguish between the functions of the focal and



marginal consciousness? Questions such as these, along with the questions of meaning and purpose, will have to be faced squarely by a psychology that would do justice to the subtler aspects of consciousness. . . . We have seen, furthermore, that the attempt to get at consciousness "as it is, existentially" under the influence of a psychological purpose, is but one of many purposes that might give form and meaning to the incoming stimulations, and that the analysis of the "that" into sensations is the process that ensues normally when the more complex habitual interpretations prove inadequate. This is the normal method of "reconstituting the object". If the psychologist's sensations are artifacts, we may turn to consciousness in the concrete and find there the prototype of the psychological analysis into sensations which yields not artifacts but actual control factors that have meaning in a concrete situation. When we cannot depend on our "knowledge" that we have really locked the door, we go back and try it; if it does not yield, we go away believing it to be locked; but if doubt assail us once more we return, place the key in the lock, open the door, then close it and turn the key, concentrating attention to the utmost upon the kinaesthetic and visual sensations that are to form the basis of our assurance that we have really locked the door. The response of consciousness to stimulation as "sensations", occurs under certain definite, problematic conditions, when other reactions, whether conscious or unconscious, fail. When his interpretation of the "world" fails the philosopher, he may come back to the "facts of sense" from which to construct the world anew, but he gets from sense only that which comports with his purpose and his problem. The psychologist's "sensation" is but one of many potential "contents" that might be aroused by the same objective source of stimulation. And when the stimulation is reacted to as a "sensation" it is the exigencies of the moment that determine what "aspect" of the sensation is to be reacted to. There is nothing sacrosanct in the union of the "attributes". . . . We have noted further that certain historic conceptions that have come down to us, stand in need of re-definition. There may be a

wholesome efficacy in the scholastics' faith in the value of the unraveling of the implications of concepts. An historic analysis, coupled with an analysis of the concrete situations of human experience in which the current psychological concepts have their beginnings in the individual mind, is a method that may prove to make no mean contribution to our body of psychological knowledge. . . . A host of problems has been stirred up and there is much labor ahead; nevertheless, the time would seem to caution us to halt and re-examine the conceptions by means of which we would analyse and explain this somewhat, whether thing, or process, or function, that we call consciousness,—and then, having become clearly aware of the nature and the origin of these conceptions, return to the task anew.



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